EMI-One

User Manual

v.6.2

for software version 2.2.0 or later

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1. Safety Rules

EMI-One is an information management system and according to current regulations, it is not a security system. It cannot be used in applications requiring property security certificates.

This device may only be operated by qualified personnel and after careful consideration of the following user manual.

Do not interfere with the design of the device or carry out repairs by yourself.

Sensors and actuators should only be connected to the designated places. Incorrect connection will cause permanent damage to the system and the sensors.

The manufacturer is not liable for any loss due to improper use or operation of the system.

The manufacturer grants certification and warranty for the device only if powered by the original power supply included in the set.

If you have any problems or concerns, please contact us:

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2. Legal Notice

The contents of this manual are for informational purposes only and the manufacturer is not liable for any damages resulting, or arising out of the use of the EMI-One system in accordance with, or not in accordance with the contents of this manual, and in particular for damages of devices other than EMI-One system. In other cases, the manufacturer's liability is limited to the sum insured by the manufacturer in the business liability insurance. The information provided and made available in this manual is not a complete description for the use and operation of the EMI-One system. In any case, people interested in obtaining additional information regarding the use of the EMI-One device should consult the manufacturer. Any content contained in this manual, as presented for informational purposes, is up to date at the time of publication and the manufacturer cannot guarantee its relevance or suitability in all situations, at all times. Any and all content contained in this manual may only be used for non-commercial private use. The content and materials provided in this manual may not be used for public or commercial purposes without the written permission of the manufacturer.

Both the way EMI-One device way of functioning, and the content of this manual may change, for development purposes without notifying its users. The most up-to-date manual can be downloaded from:

https://www.apra.de/produkte/schrankueberwachung-zutrittskontrolle-emi-one/ (in the Documents & Downloads tab).

3. Introduction

EMI-One is a device integrating the functionality of monitoring of environmental parameters with access control.

3.1 Basic features

- 4 independent 12V output channels for controlling terminal devices (e.g. an electronic handle, lighting or ventilation system),
- 4 independent binary inputs with additional parameterisation function to handle fire, gas, flood, motion, power failure, sensors, etc.
- possibility to connect up to 2 sensors of the following types : temperature, temperature and humidity (e.g. for measurement in 2 places of the cabinet) or pressure measuring,
- extended alarms triggered by input status or temperature/humidity value,
- controlling, reading, and configuring the device settings using a transparent interface via a web browser (built-in web-server).
- control functions access – supported external RFID readers and door handles from the EMI-Lock family with built-in readers suitable for: apra UNIQUE, apra MIFARE, apra HID (Proxx, iClass) and HITAG standards,
- control functions access – supported external RFID readers and door handles from external suppliers with built-in readers suitable for: EMKA Agent E hadles, Wiegand 26-bit, Wiegand 32-bit, Wiegand 34-bit and Wiegand 37-bit,
- Simple Network Management Protocol (SNMP) support with Trap notifications,
- Simple Mail Transfer Protocol (SMTP) support (the ability to send e-mail notifications in the event of an alarm),
- 12V power supply,

Optinonally:

- text message and email notifications (with SSL support) via GSM (additional module required),
- buffered power supply,
- dedicated multi-device management software for long-term recording and parameter analysis.

4. Hardware

The EMI-One monitoring system has a compact, plastic housing with dimensions of 196x71x31mm. Input, output, and power outlets are located on the rear panel, and vary according to function and application.

All sensors and actuators supplied by the apra-optinet company are provided with special plugs matching the appropriate socket type.

There is also a possibility to connect your own sensors and devices. Only trained and qualified personnel can connect the system, and only after contacting apra-optinet representative.
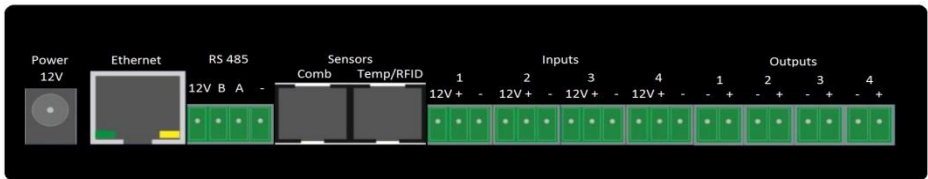
4.1 EMI-One Connectors

Fig. 1

- Power 12V – a power socket of the device using an external 12V stabilised power supply (in set included). In case of the necessity of maintaining the action of the device during lossess of line voltage, it is recommended to use a dedicated buffered power supply (sold separately).

> NOTE : The socket is galvanically connected to the 12V input and output terminals !

- Ethernet – used to connect to the network. Meets the 100BASE-T standard (10/100MBit/s).
- RS485 – RS485 bus connector used for communication with apra-optinet peripherals, e.g. Rack Display panel,

- Sensors – RJ-12 connectors used for communication with microprocessor sensors and readers:
  - o Comb – used to connect the combo sensor (temperature and humidity) of standard and high accuracy,
  - o Temp/RFID – used to connect: temperature sensor, combo sensor of high accuracy, pressure sensor and external readers/handles equipped with RFID readers. The use of multiple devices simultaneously requires a dedicated 1->2 or 1->3 distributor (sold separately).

> Connect the sensors and the readers only with the original cables provided by apra-optinet !

- Inputs – 3-pin connectors in this group numbered from 1 to 4 are used to connect any device with no voltage contact (NC/NO).

  Sample applications:
  - o Door sensor,
  - o Flood sensor,
  - o Smoke sensor,
  - o Alarm contact with UPS,
  - o Alarm contact from the fire extinguishing system.

  Make sure the detachable contacts of the device are connected to the contacts marked as „ + ” and „ - ” when connecting.

  The „12V" contact is galvanically connected to the supply voltage and can be used for terminal devices requiring additional external power supply.

- Outputs – 2-pin connectors marked with numbers 1 to 4 are used to connect the final actuators such as:
    - Handles with electronic insert,
    - Lighting,
    - Ventilation system,
    - Acoustic indicator.

The contact marked with the „+" symbol is permanently galvanically connected to the supply voltage of the device, while the „ - " contact, depending on the logic state, connects or disconnects from the ground.

> The maximum continuous current consumption for a single output cannot exceed 500 mA and the sum of the currents for outputs 1 to 4 cannot exceed 700 mA.
> If there is a need to control devices with a supply voltage greater than 12V or with increased current consumption, it is recommended to use a dedicated relay.
> Never connect a voltage above 12V to the device connectors !
> Only 4, 3 or 2-pin dedicated TBW connectors should be used for the RS-485, output and input connectors.

4.2 LED Indication

The device is equipped with LEDs illuminating the logo on the front panel of the device, and on the top of the housing which, depending on the state of the device, means:

- Continuous blue – the device is in normal mode, no alarms, configuration settings locked (safe mode),
- Flashing blue – the device is in setup mode. It is recommended to deactivate this mode after reaching the desired configuration,
- Continuous purple – the device reached in alert threshold,
- Quick flashing red – an internal failure of the device, please contact apra-optinet.

4.3 Operating modes of the EMI-One

There is a button on the side panel of the device (next to the apra logo), which allows to change the device's operating modes depending on the time it is held down. To press the button, use a thin object up to 2 mm in diameter (e.g. an office paper clip).

4.3.1 Setup mode

To configure system settings, remote and local users must switch to setup mode.

For this purpose, press and hold for about 3 seconds the button until you hear a single beep.

4.3.2 Normal mode

After successful setup of the EMI-one main module, it is recommended to turn the device into normal mode (safe) to prevent unauthorised changes in system settings and access control functionality.

For this purpose, press and hold for about 3 seconds the button until you hear a single beep.

4.3.3 Restoring factory settings

To restore the device's default settings, hold down the button for about 6 seconds, until you hear three beeps.

5. System configuration for first startup

Before you start to configure your settings, you must first connect your device properly:

- Connect the RJ-45 power cord to the Ethernet port (use a straight cable for a network switch, or a crossover cable for direct connection to the network card of the computer),
- Connect input- and output devices and sensors (optional),
- Connect the power supply to the unit using the 12-V power supply included in the set.

Proper first startup of the device is signalled by a flashing blue light of the logo, situated on the front panel and on the top of the housing.

5.1 Connecting with dedicated webserver interface

System configuration is performed using a web browser installed on a computer connected to the device through a network.

The web interface was designed to work with the current version of the following browsers, with JavaScript enabled: Google Chrome, Microsoft Edge, Mozilla Firefox, Microsoft IE.

In the address field of the browser, enter the address of the device (**192.168.1.10 by default**).

The first time you log in, you should use the following data:

User Name: admin

Password: admin

> It is recommended to change the default password for the administrator account.

6. Support for embedded web server

Upon successful login, the user has access to the device's interface, which consists of the following parts:

- Status – the status page of the device, displayed by default,
- Settings – pull-down menu with sub-pages for network settings, outputs, inputs, sensors, alerts, time, text, e-mail and SNMP notifications,
- Access Control – the user configuration section,
- Log – a history of system events.
- Logout – allows the logged in user to sign out; terminates the current session

Fig. 2

6.1 Status tab

POWER OUTPUTS 12 V				
O1	Handle Front	OFF	ON	OFF
O2	Handle Rear	OFF	ON	OFF
O3	LED Lamp	OFF	ON	OFF
O4	Fan	OFF	ON	OFF

SENSORS			
TSen	Hot Aisle	TEMPERATURE	24.75°C
CSen	Cold Aisle	TEMPERATURE	24.73°C
CSen	Cold Aisle	HUMIDITY	51.02%

INPUTS			
I1	Front Doors	|NC|	OPEN
I2	Rear Doors	|NC|	OPEN
I3	Smoke Sensor	|NC|	OPEN
I4	Flood Sensor	|NC|	OPEN

Fig. 3

The status page shown in Figure 3 consists of 3 sections which correspond to the parameters of the outputs, sensors, and inputs.

For each of the 4 outputs, the following data is shown:

- custom name for the output, customisable by the user,

- current state with additional green colour for low state, and red colour for high state,

- buttons to change the state of the output.

Parameters of the measuring part of the sensors are:

- custom name for the output, customisable by the user,

- determination of the measured volume,

- the result is accurate to 2 decimal places.

The size of this section is automatically upscaled depending on the amount and type of connected sensors (temperature, pressure or combo).

The section for analogue inputs includes:

- custom name for the input, customisable by the user,

- input mode – NC/NO (Normally Closed / Normally Open), optionally additionally parametric,

- current status of the input – *Open* or *Closed*, and after selecting the parametrisation function: *Error*.

    The background colour of the window indicates the state of the given input, and depends on whether its predefined (normal) status is at the given moment identical with the current state. Possible colours are:

    o Green if the input is normal (proper),

    o Blue if the input is in the opposite status to normal (e.g. an open contact for NC type),

    o Red only if the sensor supports the parameterisation function, and has been activated from the settings, the system can also detect the tamper status,

    o Values on the status page are updated by refreshing the content at a frequency of 5 seconds.

In case of triggering an alarm or exceed the set treshold, the colour of the corresponding cell in the first column of the table turns red.

6.2 Settings tab

When you select the SETTINGS button, an additional menu is displayed containing the following options:

- General – general device settings, network parameters, time, and SNMP,
- I/O – configuration of input and output properties,
- Sensors – configuration for a temperature sensor and a temperature and humidity sensor,
- Notifications – configuration for text and e-mail notifications.

6.2.1 General Settings

Basic Settings

BASIC SETTINGS	
MAC ADDRESS :	00.08.DC.08.00.30
IP ADDRESS :	192.168.1.10
IP PORT :	80
SUBNET MASK :	255.255.255.0
DEFAULT GATEWAY :	192.168.1.1
DNS SERVER ADDERSS :	192.168.1.1
SERVER IP :	192.168.1.123
DEVICE LABEL :	EMI - One Web Server
DISPLAY MESSAGE BOX :	
GPS COORDINATES :	
CARD READER TYPE :	MIFARE ∨
SERVER DATA PUSH (SOCKET) :	☐
REMOTE HANDLE CONTROL :	☑
TWO-STAGE AUTHORISATION (RFID PAIRS) :	☐
TWO-FACTOR AUTHORISATION (PIN+RFID) :	☐
	SAVE SAVE RESTART

Fig. 4

This section, shown in Figure 4, gives the following basic settings of the device:

- MAC Address – a field which shows the address assigned to the device, an information value,
- IP Address – the address to be used by the system, assigned by the administrator,
- IP Port – the port number used to connect to the web server, assigned by the administrator,
- Subnet Mask – the subnet mask in which the module works, assigned by the administrator,
- Default Gateway – the default gateway IP address for the network in which the device is running,
- DNS Server – the DNS server address required for proper NTP and SMTP protocols,
- Server IP – the server address where the dedicated software will run, and at the same time an update server,

> NOTE : Select and save the type of the reader before connecting it !
> Selecting the wrong option may damage the system !

- Device Label – the device name displayed in the title of the main page, and in the description of the browser window. It allows you to differentiate between many EMI-One systems working in the same network. The maximum length of the name is 16 characters.
- GPS Coordinates – a field that enables to provide geographical coordinates of the installed controller in order from the left : latitude and longitude entered as decimal degrees. The maximal length of each field is 10 characters.
- Display Message Box – a box containing a message for users. It will be displayed on a dedicated Rack Display panel (if present in the system) every time the user logs on.
- Reader Type – reader type configuration, select the type which will be used with the device,

- Server Data Push – activates communication with an external server of a dedicated apra intrapp management application,
- Remote Handle Control – if this box is checked, the system will allow you to remotely control (via a website) the **Door Handle** and **Pulse 200 ms** outputs. If the device, for safety reasons, needs to locally open the handles with an electronic door strike (using an RFID reader), leave this field unchecked. This setting does not affect the outputs configured as other types (Fan, Light, Flasher, Buzzer).
- Two-Stage Authorisation (RFID pairs) – 2-stage authorisation activation – recommended for areas requiring special protection. With this function enabled, in order to activate the output data (e.g. open the door) **a pair of identifiers must be used in a given moment, one after another in no more than 10 seconds.** In addition, a given pair of users must have permission to activate the given output (fields checked for the corresponding output for both IDs).
- Two-Stage Authorisation (PIN+RFID) - With this function enabled, in order to login or activate the output data (e.g. open the door) **the access PIN has to be entered and an identifier must be used in a given moment, one after another in no more than 20 seconds.** The EMI-One controller has to be connected to an external display module, as well as RFID identifier and PIN number are required to be assigned to the specified user.

Save settings using 2 buttons:

- Save – saves the parameters without restarting the device, changes made only after manual restart (by disconnecting the system power supply),
- Save & Restart – saves the parameters and then automatically restarts the device with the newly entered settings.

> If you change the IP address of the system, it is necessary to manually update it in the browser address field !

Time Settings

TIME SETTINGS	
NETWORK TIME ENABLE :	☑
DATE :	13 / 09 /20 19
TIME :	11 : 50 : 53
NTP SERVER :	172.16.99.189
NTP TIMEZONE :	GMT+1 ▼ Summer / winter time ☑
	SAVE UPDATE TIME

Fig. 5

The section shown in Figure 5 is used to set the time in the system clock used when saving events to the system log.

In the case of unchecked auto-synchronisation with network time, enter the date in the day/month/year format, and the current time in hh:mm:ss format.

If the *Network Time Enable* option is checked, the manually entered values are not taken into account, and the time synchronisation with the selected server is done every full hour.

The NTP server setting can be filled in with the IP address or name of the server but in that case, to ensure its proper work, it is required to configure the DNS server address in the *Basic settings* section, correctly.

External Fan Settings – function in development

EXTERNAL FAN SETTINGS			
SPEED RANGE :		10 - 70	%
TRESHOLD TEMPERATURE :		30	°C
	SAVE		

Fig. 6

Configuration values in the section shown in Figure 6 are used by the apra-optinet ventilation system controlled via the RS-485 interface.

- Speed Range – defines the permissible range of rotation speed of the ventilation system expressed as a percentage,
- Threshold Temperature – the threshold temperature at which the unit starts the ventilation system at the set speed defined in the lower Speed Range field.

SNMP Settings

SNMP SETTINGS		
SNMP PORT :		161
COMMUNITY :		•••••••
TRAP DESTINATION IP 1 :	☐	192.168.1.100
TRAP DESTINATION IP 2 :	☐	192.168.1.101
	SAVE	

Fig. 7

The settings in the section shown in Figure 7 apply to the SNMP agent built into the device.

- SNMP Port – the port used for SNMP Get queries,
- Community – the SNMP community name used to communicate with EMI-One,

- Trap Destination 1 & 2 – IP addresses of devices on the network to which SNMP Trap messages will be sent. By default, sending SNMP Trap messages is disabled. To enable them, select the control and then enter the SNMP Trap Manager IP address.

> If the entered address does not exist in a given subnet, this may cause a slowdown in the system !

System information

SYSTEM INFORMATION	
BOOTLOADER VERSION :	1.1.0
FIRMWARE VERSION :	2.0.0
FIRMWARE UPGRADE :	PROGRAMMING MODE
	SYSTEM RESTART

Fig. 8

This section shown in Figure 8 contains information about current bootloader and embedded software version of the EMI-One main module.

- Programming mode – clicking this button puts the device into programming mode that allows to install firmware upgrades,
- System restart – clicking this button results in an instant system restart.

> Detailed description of how to upgrade the EMI-One embedded firmware is included in a separate file under the name *EMI-One firmware upgrade instruction* !

6.2.2 I/O Settings

Outputs Settings

OUTPUTS SETTINGS				
	Label	Mode		Custom time
O1	Handle Front	Door Handle ∨	OR ∨	20 min
O2	Handle Rear	Door Handle ∨	OR ∨	20 min
O3	LED Lamp	Door Handle ∨	OR ∨	20 min
O4	Fan	Door Handle ∨	OR ∨	20 min
		SAVE		

Fig. 9

The section shown in Figure 9 contains the basic settings for the system outputs:

- Label – the name of the output, allowing you to easily distinguish which device is connected to it. This name is displayed on the status page, and is used in the system log, and sent with notifications. The maximum length of the name is 14 characters,
- Mode – a dropdown list defining the type of device connected to the given output. The options include:
    o Door Handle – a handle with an electronic door strike, in case of setting the output in active mode *(ON),* the controller maintains the high status for 10 seconds, then automatically deactivates it *(OFF),*
    o Fan – a fan, after switching to high status remains in it until a manual change,
    o Light – lighting, after switching to high status remains in it until a manual change,
    o Flasher – an optical signal, after switching to high status remains in it until a manual change,
    o Buzzer – a sound signal, after switching to high status remains in it until a manual change,

  - o   Pulse 200 ms – a single trigger pulse, when the output is in high
        status, it is maintained for 200 ms, and then automatically changes
        to low status,
  - o   Custom – With this setting enabled, after triggering the high status
        (*ON*) of an output, it is maintained upon a determined in the
        Custom time section period of time (20 minutes by default) and
        then automatically changes to low status (*OFF*). This type of setting
        is used e.g to uphold the lighting of a cold corridor.
- Logic Condition – a condition used by the logic of the automatic control
  system triggered by the input status and the measured values of
  temperature and humidity. Depending on the setting:
  - o   OR – any condition fulfilled in which the control has been defined
        for the output will change the status of the output,
  - o   AND – all conditions fulfilled in which the control has been defined
        for the output will change the status of the output.
- Custom time – determines for how long (defined in minutes) should the
  output status remain high *(ON)*. The available value range is between 0 ÷
  99. This setting can only be used if the *Mode* setting of an output has been
  previously set as '*Custom'.*

Inputs Settings

	Label	Mode	Condition	Time	O1	O2	O3	O4	Alarm	Buzz	Trap	SMS	Mail
INPUTS SETTINGS													
I1	Front Doors	NC ◉ NO ○ PARAM ☑	OPEN ▾	10	☐	☐	☐	☐	☐	☐	☐	☐	☐
I2	Handle Contact	NC ◉ NO ○ PARAM ☑	OPEN ▾	10	☐	☐	☐	☐	☐	☐	☐	☐	☐
I3	Gas Detector	NC ○ NO ◉ PARAM ☐	CLOSED ▾	10	☐	☐	☐	☐	☐	☐	☐	☐	☐
I4	Flood Detector	NC ○ NO ◉ PARAM ☐	CLOSED ▾	10	☐	☐	☐	☐	☐	☐	☐	☐	☐
			SAVE										

Fig. 10

The section shown in Figure 10 contains the basic settings for the system intputs:

- Label – the name of the input, allowing to easily distinguish which sensor is connected to it. This name is displayed on the status page, is used in the system log and sent with notifications. The maximum length of the name is 14 characters.
- Mode – operation logic of the sensor, available options:
  - NC (normally closed) – normal status occurs when the input is closed,
  - NO (normally opened) – normal status occurs when input is opened.

  If a sensor is equipped with a parameter, it is possible to use the additional PARAM option, which detects sensor tampering (ERROR input status).

- **Condition** – condition which is fulfilled for the action to be performed, the options available are OPEN (contacts open), CLOSED (contacts closed) and ERROR (tampering detected only after activating this function beforehand),
- **Time** – parameter defines how much time (in seconds) the device will wait before taking any action (O1 ÷ O4 and alarm fields) when state of Input will change after the specified condition is met.
- **O1 ÷ O4** – the selection will switch the output into high status when the logical condition is fulfilled and to a low status after its completion. The control condition of the output is influenced by the setting of the logical condition in the Output Settings,
- **Alarm** – checking this option activates the alarm function triggered by input status,

> Checking this function is required for Buzzer/Trap/SMS and Mail notifications !

- **Buzz** – checking this option activates a built-in sound alert in case of an alarm,
- **Trap** – checking this option activates automatic SMTP Trap notification when an alarm occurs and ends. For proper operation, it is necessary to correctly configure destination addresses for SNMP Trap notifications in the SNMP Settings section,
- **SMS** – checking this option activates text notifications to defined recipients, when an alarm occurs and ends. An additional GSM module is required for this function,
- **Mail** – checking this option activates e-mail notifications to defined recipients when an alarm occurs and ends. An additional GSM module is required for this function.

6.2.3 Sensors Settings

SENSORS SETTINGS													
	Label	Condition		Hyst		O1	O2	O3	O4	**Alarm**	Buzz	Trap	SMS	Mail
S1	Hot Aisle	> ▾	30 °C	4 °C		☐	☐	☐	☑	☐	☐	☐	☐	☐
		> ▾	40 °C	4 °C		☐	☐	☐	☐	☑	☐	☑	☑	☑
S2	Cold Aisle	> ▾	30 °C	4 °C		☐	☐	☐	☑	☐	☐	☐	☐	☐
		> ▾	40 °C	4 °C		☐	☐	☐	☐	☑	☐	☑	☑	☑
		> ▾	60 %	4 %		☐	☐	☐	☑	☐	☐	☐	☐	☐
		> ▾	80 %	4 %		☐	☐	☐	☐	☑	☐	☑	☑	☑
			SAVE											

Fig. 11

The section shown in Figure 11 contains the basic settings for temperature and combo (temperature/humidity) sensors. For each measured value, it is possible to configure 2 independent alarm thresholds. The following fields define:

- Label – a proprietary name of the sensor, which allows for easy identification of its position in the cabinet. This name is displayed on the status page, is used in the system log and sent with notifications. The maximum length of the name is 14 characters,
- Condition – a condition when met triggers an action, the setting contains a threshold above or below which, depending on the selected character (majority or minority), the alarm will be triggered,
- Hyst – the hysteresis value for a given alarm threshold, the recommended value is 4°C,
- O1 ÷ O4 – the selection will switch the output into high status when the condition is fulfilled, and to a low status after its completion. The control condition of the output is influenced by the setting of the logical condition in the Output Settings section.
- Alarm – checking this option activates the alarm function triggered by the result of the given measurement,

> Checking this function is required for Buzzer/Trap/SMS and Mail notifications !

- Buzz – checking this option activates a built-in sound alert for the alarm,
- Trap – checking this option activates automatic SMTP Trap notification if an alarm occurs and ends. For proper operation it is necessary to correctly configure destination addresses for SNMP Trap notifications in the SNMP Settings section,
- SMS – checking this option activates text notifications to defined recipients if an alarm occurs and ends. An additional GSM module is required for this function,
- Mail – checking this option activates e-mail notifications to defined recipients if an alarm occurs and ends. An additional GSM module is required for this function.

6.2.4 Notification Settings

The EMI-One monitoring and access control system can also be equipped with an external GSM module, which enables sending text message and e-mail (SMTP SSL) notifications. With the use of a GSM network, the user can be assured important information will reach him regardless of potential problems on the Ethernet connector.

Detailed description of EMI-One settings that allows to use an external GSM module is included in technical documentation of the GSM modules that are currently offered by the apra-optinet company.

SMS Notification Settings

SMS NOTIFICATION SETTINGS	
SMS NOTIFICATION ENABLE :	☑
PHONE NUMBER 1 :	
PHONE NUMBER 2 :	
PHONE NUMBER 3 :	
	SAVE SEND TEST MESSAGE

Fig. 12

The section shown in Figure 12 contains the basic parameters related to text message notification:

- SMS Notification Enable – activation of the text message notification function – NOTE : this requires the presence of an external GSM module in the system !
- Phone Number 1÷3 – phone numbers to be sent in the xxxxxxxxx format, or with area code 0048xxxxxxxxxxx (without spaces, hyphens etc.)
- Send Test Message – a button to test the settings by sending a test message to the previously saved telephone numbers.

NOTE: The SIM card used in an external GSM module cannot have a PIN code enabled!

E-mail Notification Settings

MAIL SETTINGS	
MAIL NOTIFICATION ENABLE :	☐
LOCAL SMTP CLIENT / GSM GATEWAY :	☐ / ☐
SERVER :	example.server.com
LOCAL PORT / GSM PORT :	25 25
ENABLE SSL (GSM ONLY) :	☐
USERNAME :	user
PASSWORD :	....
DESTINATION ADDRESS 1 :	
DESTINATION ADDRESS 2 :	
DESTINATION ADDRESS 3 :	
ENABLE DETAILED MESSAGE TOPIC :	☐
INCLUDE CUSTOM MESSAGE PREFIX :	☐
	SAVE CONFIGURE GATEWAY SEND TEST MESSAGE

Fig. 13

The section shown in Figure 13 includes settings related to e-mail notification:

- Mail Notification Enable – activates the e-mail notification feature,
- Local SMTP Client – activates the built-in SMTP client of the EMI-One device to send e-mail notifications to non-encrypted servers,
- GSM Gateway – activates the SMTP client in the GSM gateway for sending e-mail notifications, also supports servers requiring encryption (SSL),

> NOTE: An external GSM module (local or remote) is required for operation !

- **Server** – the address of the SMTP mail server from which you want to send messages. This field can be filled in with the IP address or name of the server but in that case, to ensure its proper work, it is required to configure the DNS server address in the *Basic settings* section, correctly.
- **Local Port/GSM Port** – the SMTP mail server ports of the account from which the messages will be sent. The value from the left field is used by the customer built into the EMI-One device, while the right-hand value by the GSM module. Standard is 25 / 587 for unencrypted connections, and 465 for encrypted connections.
- **Enable SMTPS** – activates encrypted connection – only with GSM (if required by client server, details in configuration descriptions of given e-mail account type),
- **Username/Password** – username and password for the e-mail account. The maximal length of each field is 25 characters.
- **Destination address 1÷3** – destination addresses to which notifications have to be sent,
- **Enable detailed message topic** – expands the topic section (email notifications) by additional details,
- **Include custom message prefix** – enables adding to the message or optionally (depending on the selected configuration) to the message topic, an additional, user defined string entered by the user in the field nearby. The maximal legth of the entered custom prefix is 50 characters.
- **Configure Gateway** – a button for entering the work parameters for the external GSM module, which should be used after saving the settings with the *SAVE* button,
- **Send Test Message** – a button to test the settings by sending a test e-mail.

Settings required to send e-mail notifications via EMI-One

To use the functionality of sending e-mail notifications via the EMI-One main module, following configuration have to be set:

- Mark the Mail Notification Enable,
- Mark the Local SMTP Client,
- Fill in the Server field the address of SMTP mail server from which you want to send messages,
- In the Local Port field, Enter the SMTP mail server port of the account from which the messages will be sent,
- In the Username/Password fields, enter the required user credentials from which the e-mail notifications have to be sent
- Enter destination addresses to which notifications have to be sent in Destination address 1÷3 section,
- Save the changes and then validate by clicking the Configure Gateway button,
- Check if notifications are sent properly by clicking the Send Test Message button.

If the device is working properly, the following message will be sent to the specified e-mail addresses: [EMI_device_name]: Test Mail Message.

Remember to save the final settings with the *Save* button and then validate with the *Configure Gateway* button.

Examples of e-mail notifications

Depending on the chosen configuration, the sent messages (e-mail notifications) can include the following **topic :**

- o Function *Detailed message topic* disabled – the message is sent with a short syntax topic :

EMI-One *(the entered Device Label)* Notification

- o Function *Detailed message topic* enabled – the message topic includes additional information :

The content of custom message prefix – latitude longitude – the entered Device Label - Environment sensor : *name of the input / sensor that triggered the alarm*

Depending on the chosen configuration, the message (e-mail notification) can contain the following **content** :

The content of custom message prefix – latitude longitude. – the entered Device Label - Environment sensor : *name of the input/sensor that triggered the alarm* - State : *depending on the alarm source : Open/Closed/Error or environmental data Temperature / Temperature and Humidity*

The fields marked with grey colour contain data that is assigned automatically when an alarm is triggered, depending on the data that has been entered by the user during configuration.

In case of ending an alarm, the notification syntax contains the following information:

     o Function *Detailed message topic* disabled – the message is sent with a short syntax topic :

EMI-One *(the entered Device Label)* Notification

     o Function *Detailed message topic* enabled – the message topic includes additional information :

The content of custom message prefix – latitude longitude – the entered Device Label - Environment sensor : *name of the input / sensor that triggered the alarm*

Depending on the chosen configuration, the message (e-mail notification) can contain the following **content** :

The content of custom message prefix – latitude longitude. – the entered Device Label - Environment sensor : *name of the input/sensor that triggered the alarm* - State : Normal Alarm Inactive

6.3 Access Control Tab

The EMI-One system provides the ability to create individual accounts for each user: both using remote (web-server) and local access (RFID cards, PIN codes for apra Rack Display panels).

The Access Control tab, shown in Figure 14, presents a table with the current configuration of user accounts containing information such as: name, login and password for the web server, RFID card ID, PIN code and permission flags for the given device outputs. Settings are edited from the additional section available after selecting one of the buttons on the bottom.

No.	Name	Login	Role	Card ID	PIN	Output flags
1	Admin	admin	admin			O1 | O2 | O3 | O4 |
2	User	user	user			
3	User1	user1	admin	000001676176917		O1 | O2 |
4	User2		admin		456676	O1 | O2 | O3 | O4 |

Add	Edit	Delete

Fig. 14

6.3.1 Add User

Rys. 15

Adding a new user entry is reduced to filling the following fields, shown in Figure 15:

- Name – user's own name, it is used when logging events in the system log and sent with SNMP Trap notifications. The maximum length of the name is 10 characters.

- User Login/Password – (optional) login and password used to authenticate the user at the login stage to the web server. If the user is not using the web server, leave these fields blank. The maximum length of each field is 10 characters.

> The username and login/password pair must be unique within the system !

- User type – permission level, there are two levels available:

  o User – a standard user who only has access to the status page and the system log. It is not possible to view and edit system settings, remote users and local users.

  o Admin – a system administrator who has the ability to view and edit all system parameters, however you must first activate the configuration mode (hardware-controlled) – explained in the Hardware section.

- Card Number – (optional) unique identification number for the access card assigned to the user. The device allows to control chosen outputs with the use of an additional reader (RFID UNIQUE/MIFARE/HID/HITAG tags e.g. proximity cards, key rings).

- PIN – (optional) custom code used for authentication of the user with an additional EMI-One dedicated element – Rack Display.

- [name of output no. 1 ÷ 4] – the fields used to assign activation permissions for a given user's individual output, the header of the given output assigned by the administrator is displayed in the header. The setting affects both remote and local switching.

- Last used card – the field allows displaying the last used ID (card) for easier assignment to the system.

> NOTE : This field does not refresh automatically after reading an RFID card. Use the *Read* button to refresh the displayed card number !

- Read button – use this button to load information from EMI-One about the last RFID card used.

- Use button – use this button to automatically copy the read number into the Card number field above.

In the case of using cards that were not assigned to the system, their correct reading is signalled by a single short beep.

When the card is successfully assigned to the system, the authorisation for the card is reduced to approx. 1 to 2 seconds until a short double beep is heard.

Every time a card/PIN is used on the screen and logged into the system log, a SNMP Trap notification is sent to each managed output (see SNMP Settings).

- Apply – save the changes to device. In some situations it may take few seconds for the information to be send and update on users summary table.

- Cancel – close the form without saving any entered informations.

6.3.2 Edit User

If there is a need to edit an existing user entry, use the form shown in Figure 16:

- User entry – a list containing the user names currently assigned to the system, select the name to be edited.

- User Login/Password – a new login and password. If the field remains blank, the system will retain the previous data.

- Card Number – a new RFID card number. If the field remains blank, the system will retain the previous data.

- PIN – a new code for authentication using dedicated Rack Display. If the field remains blank, the system will retain the previous data.

Other fields and buttons have the same function and behaviour as described in section Add User above.

Fig. 16

6.3.3 Delete User

User entry

-- Select user name to edit -- ▼

Apply

Cancel

Fig. 17

If there is a need to delete a user entry, select the desired name from the *User Name* field, and execute the *Delete* command.

> NOTE : If the account of the currently logged-in user is deleted, it will be automatically logged out !

7. Log

Date	Severity	Description	User type	User name
2022-06-15 14:40:20	notification sent	failed	auto	mail destination 3
2022-06-15 14:40:20	notification sent	failed	auto	mail destination 2
2022-06-15 14:40:20	notification sent	success	auto	mail destination 1
2022-06-15 14:40:17	alarm	S2 (Cold Aisle) ACTIVE	auto	---
2022-06-15 14:39:41	notification sent	failed	auto	mail destination 3
2022-06-15 14:39:41	notification sent	failed	auto	mail destination 2
2022-06-15 14:39:41	notification sent	success	auto	mail destination 1
2022-06-15 14:39:34	alarm	S2 (Cold Aisle) ACTIVE	auto	---
2022-06-15 11:16:10	notification sent	failed	auto	mail destination 3
2022-06-15 11:16:10	notification sent	failed	auto	mail destination 2
2022-06-15 11:16:10	notification sent	success	auto	mail destination 1
2022-06-13 12:00:33	settings change	outputs	remote	Admin
2022-06-13 12:00:22	settings change	outputs	remote	Admin
2022-06-13 12:00:18	settings change	outputs	remote	Admin
2022-06-13 08:52:40	notification	O4 (Fan) OFF	remote	Admin
2022-06-13 08:52:40	notification	O3 (LED Lamp) OFF	remote	Admin
2022-06-13 08:52:39	notification	O2 (Handle Rear) OFF	remote	Admin
2022-06-13 08:52:39	notification	O4 (Fan) ON	remote	Admin
2022-06-13 08:52:38	notification	O3 (LED Lamp) ON	remote	Admin

Search for date, type, description or user...

Fig. 18

The card shown in Figure 18 shows the log of system events.

Each entry contains the following data - columns of the table:

- Date – system date and time when an entry has been created,
- Severity – notification type. Following types are available :
    - alarm – indicates alarm has been activated or disactivated, ,
    - settings change – change system settings with information on exactly what settings were changed and which user did the change (login),
    - notification – system alerts, such as a status change for outputs,
    - notification sent – information about sending an e-mail notification request via SMTP client within the EMI-One controller framework.
- Description - contains more detailed information about a given event. Depending on the severity type, following options are available:
    - alarm – contains the user's label for the signal which triggered the alarm (Input or sensor label), as well as an information whether it was the start or end of the alarm state for this sensor,
    - settings change – information on exactly what settings were changed and which user did the change (login),
    - notification – includes user defined label of an output which state has been changed and information whether it was switching it into active (ON) or inactive mode (*OFF*),
    - notification sent – information about the e-mail notification sending status for each of the recipients (*notification settings -> mail settings -> destination address 1/2/3*); by successful status confirmed by the e-mail server, the status will be shown as *success* and by sending error or wrong destination address the status will be shown as *failed*.

- **User type** – this field contains information about type of the user responsible for an action:
    - **remote** – remote user (web-server),
    - **local** – local user: RFID tag or PIN,
    - **auto** – for actions taken automatically by the EMI-One controller.
- **User name** - contains the name of the user who performed the action, assigned at the stage of creating the given account (only for *settings change* and *notification* events).

The entries in the log are stored in the non-volatile memory of the device.

> NOTE : Restoring the default settings deletes all entries in the log !

Restoring the default settings deletes all entries in the log.

The events are saved non-stop with a capacity of 2000 entries, which means that after the limit is reached the oldest entry is replaced by the newest one.

The entries are listed from the newest one.

8. Technical data

Physical parameters

Dimensions	196x71x31 mm
Temperature range	0°C to 40°C
Humidity range	10% to 90%, non-condensing
Protection rating	IP20
Certifications	CE

Power

Socket	Power 12 V
Voltage	12 V DC
Current	Min. 150 mA
Pin	DC Jack 2.5x5.5 mm

Network parameters

Interface	RJ45 (100BASE-Tx) – 10/100 Mbps
Supported protocols	ARP, DNS, HTTP, SNMP, SNTP, SMTP
SNMP	SNMP Get, SNMP Trap

Inputs

Type	Binary (NO/NC) with additional parameterisation (tampering detection)
Socket	Inputs 1 ÷ 4
Pin	TBW-3.5-3 pin
Amount	4
Power	Additional 12 V DC supply for the sensors, galvanically connected to the positive voltage of the device
Voltage limit	on the „ + " contact: 5 V Do not connect any external voltage source to the 12 V contact !

Outputs

Type	Voltage (12 V DC constant on the „ + ” contact, attached ground)
Socket	Outputs 1 ÷ 4
Pin	TBW-3.5-2 pin
Amount	4
EPower	Galvanically connected to the positive voltage of the device
Load limit	For a single socket: 500 mA Sum for sockets 1 ÷ 4: 700 mA Do not connect any external voltage source to the 12 V contact !

Sensors

Type	Microprocessor temperature sensors, temperature/humidity sensors, RFID readers, electronic handles apra EMI-Lock
Socket	Sensors: Temp/RFID, Comb
Pin	RJ12
Amount	2
Power	5 V DC
Comments	Connect only the temperature/humidity sensors to the *Comb* socket (standard and high accuracy). Connect the temperature, combo (high accuracy only), pressure sensor or external RFID readers/electronic handles from the EMI-Lock family to the *Temp/RFID* socket.

Indicators

LEDs	Blue and red illuminating the logo on top of the device and the front panel
Buzzer	Built-in sound signal

9. **Warranty**

Warranty/post-warranty service and repairs

Installer/Service Provider	Action performed	Date

………………………………………………   ………………………………………………………
           Sale date   Signature and seal of the seller

> NOTE :
> Instruction manual is also a service book. Please keep it in a safe place.

10. Notes

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