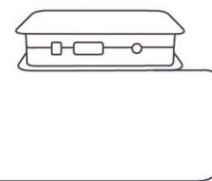


# INSTALLATION MANUAL

Connection Server



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## 1. Preface

Connection Server - It serves as a connection between iNELS BUS system units and other devices because it allows communication between devices with different protocols. All devices can be then controlled through just one application. Besides the normal control of electronic installations, you can also control e.g. air condition, home appliances.

The connection server uses a small but powerful computer, Raspberry PI B+, 3 with really low power consumption and the Linux operating system.

In comparison with iMM Server, multimedia is not implemented here.

### Protocols

RPC	communication with application smartphones and tablets
Elkonet	communication with central unit iNELS BUS
Miele	communication with home appliances Miele
Camcontrol	communication with IP cams
Artea	communication with the Artea air handling unit
Coolmaster	communication with gateway for air conditioning
Airpohoda	communication with the Airpohoda air handling
eLAN-RF	communication with wireless components of iNELS RF Control

### Notes

⇒ Commands are given in purple

(e.g.: `sudo reboot`)

! Warnings are given in red

(e.g.: **Connection server it allows you to set up only one door intercom.**)

! Tips and tricks are given in green

(e.g.: **In the list of devices, we can add and remove devices manually**)

### Important application configuration commands in Linux (insert into terminal)

<code>ifconfig</code>	- finding IP address of station/server, similar to ipconfig in Windows
<code>mount</code>	- command for connection of certain device (CDROM, network drive, flash disk, etc.)
<code>umount</code>	- command for disconnection of certain device
<code>man</code>	- command man displays help e.g. <code>man mount</code>
<code>sudo shutdown -h now</code>	- command shut down device Connection server from terminal
<code>sudo poweroff</code>	- command shut down device Connection server from terminal
<code>sudo reboot</code>	- command reboot device Connection server from terminal

## 2. Launching the connection server

- a) Once you unpack the Connection server, let the device stabilize at room temperature.
- b) Insert the micro SD card with the operating system into the slot. In newer CS revisions, the SD card is already inserted.
- c) Connect the cabling (do not connect the supply yet):
- Display HDMI device
  - LAN cable for Ethernet port
  - Keyboard to USB port

For proper functionality we recommend connecting Connection Server to UPS (Uninterruptible Power Supply).

- d) After connecting power supply (adapter with micro USB connector) the Connection Server will start automatically.

- e) When starting the system you can watch the opening of individual services on the screen.

- f) When services start up is completed, only one line, requiring the login name will appear on the screen

```
Login:      imm
Password:   imm123
```

! No characters are display when writing a password in terminal

- g) To find the IP address after signup use the command ifconfig or extract it from the previous statement.

- h) Further settings are performed via the IMM Control Centre web interface. A display device or keyboard need not be connected for the remaining time. Power supply, micro SD card with system and application and connection to network LAN is sufficient to run Connection Server.

! Never insert or remove the micro SD card for running the Server Connection

### List of usable ports:

Port	Protocol	Description
8080	TCP	Connection Server - access to web-interface
8081	TCP	Connection Server - access to update server web-interface
9000	TCP	Connection Server - access to web-interface of LMS Audio zone and Audio player GUI
9001	TCP	Connection Server - access to daemon supervisor web-interface overview (daemon maintenace and logging)
8090	TCP	iMM Client - access to web-interface client part
61695	TCP	LARA - access to web-interface / remote control for third-party devices and applications
62000	TCP	LARA - access to port related to DLNA server. It is based on UPnP to stream audio content.
80	TCP	eLANRS485-232 - access to web-interface
8000	TCP	iHC applications - access to encrypted communication between applications and Connection Server / IMM server
9999	UDP	iHC applications - access to communication between applications and central unit CU3
61682	UDP	iHC applications - access to communication between applications and central unit CU2
9999	UDP	iHC applications - access to communication between applications and RFPM-2M
80	TCP	eLAN RF - access to web-interface
8001	TCP	iHC applications - access to unencrypted communication between applications and Connection Server / IMM server

More detailed description of the port use:

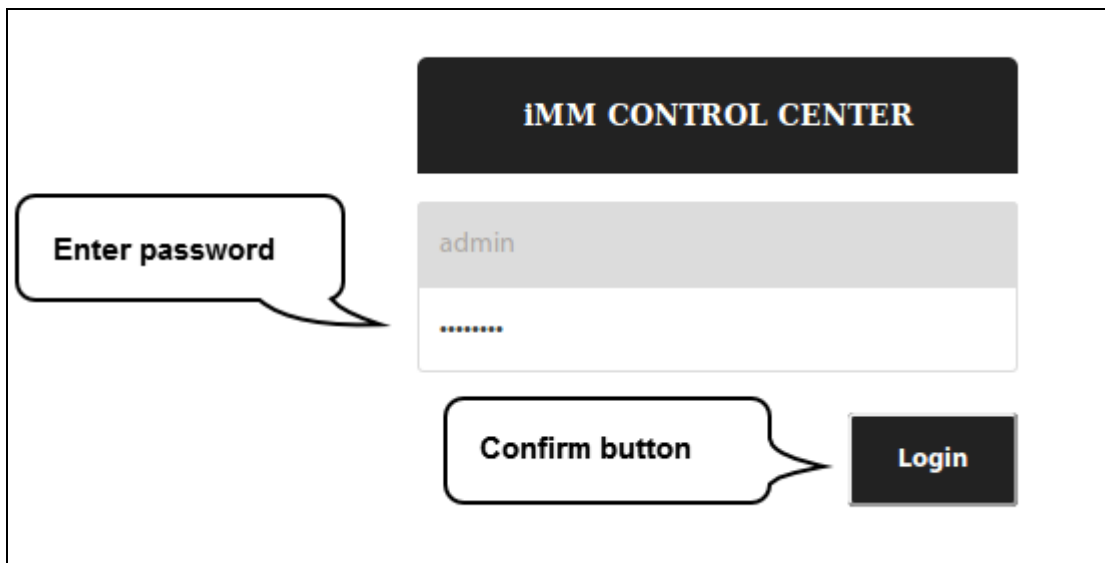
[https://en.wikipedia.org/wiki/List\\_of\\_TCP\\_and\\_UDP\\_port\\_numbers](https://en.wikipedia.org/wiki/List_of_TCP_and_UDP_port_numbers)

#### Configuration in iMM Control Center - Connection Server

iMM Control Center (hereinafter "iMM CC") is a web interface for adjusting the Connection Server.

iMM CC will run when you enter the address <http://IPADRESA:8080> into your web browser and login using the access data.

Login data is by default the following settings: "admin", password "imm123"



If iMM CC does not run, connect to the server using the SSH protocol with the IP address of the Connection Server and enter it into the terminal

⇒ Command: `sudo /etc/init.d/imm-web admin restart`.

#### SSH authorization

Login:	imm
Password:	imm123

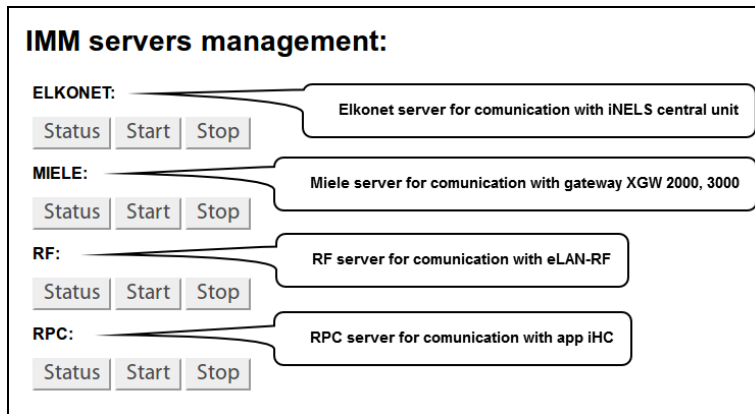
! You can change the Default password, in the terminal: `passwd imm`

i PuTTY is freeware that you can use to connect via SSH to the iMM CC web interface in Windows or Linux.

i Website will be automatic logout after 15 minutes of inactivity.

- **Bookmark Server**

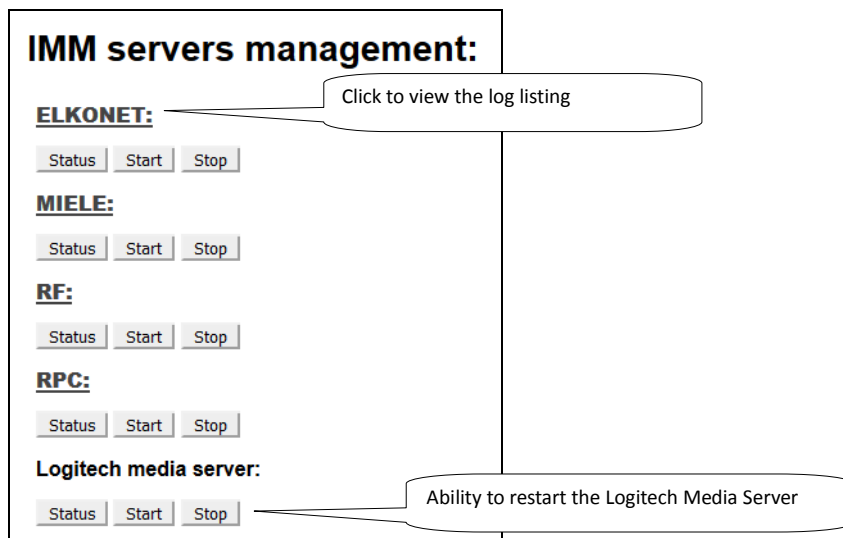
In bookmark Server you can control the services, which are necessary for communication with a third party. With the software diagnostic is possible to check each service status (button „Status“), to stop running (button „Stop“), or vice versa to start running (button „Start“).



You can control all the virtual servers via Supervisor service link <http://IPADRESA:9001>

Function Display log:

To display the logs of the main server protocols, click on the individual names to display their listings in the next tab of the browser..





## • Bookmark Configuration

The configuration tab is used to setup the primary Connection Server and is necessary for proper function.. Machine ID and Licence key are pre-set in factory default.

### a) Settings

#### IP address input formats:

If the central unit is on a different computer network behind a router (NAT) and is not available directly, it can be connected to it over a selected open port on the router, which is connected to the communications port CU (CU2 port 61682, CU3 port 9999).

Version CU	Format	Example:
CU2	[IPADDRESS]:[COMUNICATION_PORT]	10.5.15.12:8454
CU3	[IPADDRESS]:[HTTP_PORT]:[COMUNICATION_PORT]	10.5.15.12:8080:4562

**Communication port** - Elkonet for IMM server, Connection server, App iHC (CU2 port 61682, CU3 port 9999).

**HTTP port** - is the web server on CU3 where the created export.imm file is usually stored in the location `http://IPADRESA/immfiles/export.imm` (port 80)

**ASCII port** - port for communication with CU3 with a three-way third-party protocol (Telnet), which must first be set in IDM (optional), is set, the port for ASCII communication is 1111.

**Password** - password to access the central controller of the program is set in the IDM (optional)

Example setup menu settings:

The screenshot shows the 'Settings' menu of the iNELS3 device. Callouts provide the following information:

- Select the name of the device visible when searching through Elko Finder:** Points to the 'Device Name' field, which contains 'Conn-Server'.
- Save, update:** Points to the 'update' button.
- Display the current status of CU:** Points to the 'Check iNELS3 CU' button.
- Enter the IP address of the central unit:** Points to the 'IP of iNELS CU' field, which contains '10.10.5.186'.
- Enter the specified password for IDM:** Points to the 'Password' field, which contains '\*\*\*\*\*'.
- Enter the communication port for ASCII:** Points to the 'ASCII port (optional)' field.
- Enter the IP address of the Connection Server:** Points to the 'IP of IMM Server' field, which contains '127.0.0.1'.
- Key ID:** Points to the 'Machine ID' field, which contains '2b6c8c846b528b1ed9ef1268d84723ef'.
- Licence Key:** Points to the 'Licence key' field, which contains '81594496cd2b8bf7'.
- Load export CU3 iNELS3:** Points to the 'Load iNELS3 export' button.
- Delete export:** Points to the 'Delete iNELS3 export' button.
- iNELS3 current export header:** Points to the 'Export header' text, which displays: 'VERSION\_01-03-03\_CREATE\_2019-09-13-14-42\_IDM3\_03-03-34\_ID\_98BB61B2EF1B5F49B6F63D350E5D9AAE\_NAME\_IMM-kufr-20180110'.
- Upload iNELS2 export:** Points to the 'Upload iNELS2 export' button.
- Delete iNELS2 export:** Points to the 'Delete iNELS2 export' button.

Clicking on button Check iNELS3 CU will show central unit state including password authentication state.

CU connection state

Protocol version

CU login state

**CU STATE**

CU address: 10.10.3.34:9999

CU connection: CONNECTED

CU state: CU is RUNNING (0x20)

Protocol version: 00.02.00

User password enabled: True

Login state: OK

**Settings**

IP of INELS CU:	10.10.3.34
Password:	••••••
ASCII port (optional):	
IP of IMM Server:	192.168.88.55
Machine ID:	1224b1e5dc751f937263b45541a12439
Licence key:	612bdf592b1e0d69

update
Check iNELS3 CU



## b) Upload or edit export.pub

This menu is used for the upload export.pub file from the IDM program to the Connection server and to manually edit elements in web browser.

### Edit export

SA3-06M\_RE5\_000020 R B 16908293 .0 BOOL PUB\_INOUT  
SA3-06M\_RE5\_000020\_ON R B 16908293 .0 BOOL PUB\_INOUT  
SA3-06M\_RE5\_000020\_OFF R B 16908293 .0 BOOL PUB\_INOUT  
SA3-06M\_RE6\_000020 R B 16908294 .0 BOOL PUB\_INOUT  
SA3-06M\_RE6\_000020\_ON R B 16908294 .0 BOOL PUB\_INOUT  
SA3-06M\_RE6\_000020\_OFF R B 16908294 .0 BOOL PUB\_INOUT  
DA3-22M\_IN1\_000021 R B 16842753 .0 BOOL PUB\_INOUT  
DA3-22M\_IN2\_000021 R B 16842754 .0 BOOL PUB\_INOUT  
DA3-22M\_OVT-ALERT1\_000021 R B 17235969 .0 BOOL PUB\_INOUT  
DA3-22M\_OVLO-ALERT1\_000021 R B 17235970 .0 BOOL PUB\_INOUT  
DA3-22M\_OVT-ALERT2\_000021 R B 17235971 .0 BOOL PUB\_INOUT  
DA3-22M\_OVLO-ALERT2\_000021 R B 17235972 .0 BOOL PUB\_INOUT  
DA3-22M\_OUT1\_000021 Y B 17039361 REAL PUB\_INOUT  
DA3-22M\_OUT1\_000021\_ON Y B 17039361 .0 BOOL PUB\_INOUT  
DA3-22M\_OUT1\_000021\_OFF Y B 17039361 .0 BOOL PUB\_INOUT  
DA3-22M\_OUT2\_000021 Y B 17039362 REAL PUB\_INOUT  
DA3-22M\_OUT2\_000021\_ON Y B 17039362 .0 BOOL PUB\_INOUT  
DA3-22M\_OUT2\_000021\_OFF Y B 17039362 .0 BOOL PUB\_INOUT  
DA3-22M\_TIN\_000021 Y B 17104897 REAL PUB\_INOUT  
IM3-80B\_IN1\_000022 R B 16842755 .0 BOOL PUB\_INOUT  
IM3-80B\_IN2\_000022 R B 16842756 .0 BOOL PUB\_INOUT

Change to "List of components in export"

update

! Function for upload export.pub is only for iNELS2 central unit.

! The central unit iNELS3 will download export automatically when you press the Load iNELS3 export button.

i In list we can add and remove elements manually.

## • Bookmark System

In the System tab, you can reset the network settings, or restart or completely shut down using the "Shutdown" Connection server button.

In the **Network settings** menu, you can set the IP address of the Connection Server. The options are to assign an address from the DHCP server or manually set the static IP address.

We recommend that you set a static IP address so that it does not change if the DHCP server is reset

The screenshot shows the 'Network settings' window. On the left, there are two callouts: 'DHCP address' pointing to the 'DHCP' radio button, and 'Static IP address' pointing to the 'Static IP' radio button. The 'Static IP' option is selected. Below the radio buttons is a 'Save' button with a callout 'Save settings'. The main area contains fields for 'IP: 192.168.88.55', 'Netmask: 255.255.255.0', 'Gateway: 192.168.88.1', and 'DNS: 8.8.8.8'. Callouts point to these fields: 'Set IP address' for IP, 'Set network mask' for Netmask, 'Set gateway router' for Gateway, and 'Set DNS server' for DNS.

! By setting the static IP address, the DHCP server will deactivate the IP address assignment and the IP address will be set according to the user settings. Network IP address information.

! If you are using a dynamic IP address from the DHCP server set the router to always allocate the same IP addresses based on the MAC addresses.

In the **Data and time settings** menu - displays the system time to check and adjust the time.

The screenshot shows the 'Data and time settings' window. It contains dropdown menus for 'Day: 26', 'Month: February', 'Year: 2018', 'Hour: 13', 'Minute: 21', and 'Second: 53'. At the bottom, there are 'Refresh' and 'Save' buttons. Callouts point to 'Refresh settings' for the 'Refresh' button and 'Save settings' for the 'Save' button.

In the **Change Password** menu - change the password.

The screenshot shows the 'Change password' window. It has two input fields: 'New password:' and 'Retype new password:'. The 'New password' field contains six dots. Below the fields is a 'Save' button.

In the **Edit password** menu (remote control - setting and editing the heating plans in the application).

The screenshot shows the 'Edit password (remote control)' window. It has two input fields: 'New password:' and 'Retype new password:'. The 'New password' field contains six dots. Below the fields is a 'Save' button.

Other settings in the menu:

The screenshot shows the 'Update server', 'Shutdown server', 'Restart server', 'Restart server regularly', and 'NFS Server Configuration' sections of the web interface. Callouts provide detailed instructions for each function:

- Update server:** A callout points to the 'Update' button, stating: 'Redirected to an update server to update the server.'
- Shutdown server:** A callout points to the 'Shutdown' button, stating: 'Button Shutdown you can remotely shutdown Connection server from Web interface.'
- Restart server:** A callout points to the 'Restart' button, stating: 'Button Restart you can remotely restart Connection server from a Web interface.'
- Restart server regularly:** This section includes a time selection interface (0 m, 0 h, Sunday d) and 'Set' and 'Delete' buttons. Callouts explain:
  - 'Set the scheduled reboot of the ServerConnection at a specified time of the week.'
  - 'Set the minute, hour and day of the week' (pointing to the time fields).
  - 'Delete settings' (pointing to the 'Delete' button).
  - 'Save settings' (pointing to the 'Set' button).
- NFS Server Configuration:** A callout points to the 'Update' button, stating: 'Button Update refresh NFS sharing settings in the file /etc/fstab'.

A red warning callout is also present: '! To re-start, disconnect and reconnect the micro USB power connector to the Connection Server.'

- **Bookmark Media**

The tab is only available for RPI from version 3. The **Settings** section is taken from iMM. The **NAS** section is used to enter the IP address for the **NAS**. When selecting the manual option, a user option is inserted instead of the IP address e.g.:

**MANUAL SYNOLOGY NFS:**

```
IP_ADDRESS/volume1/Storage /mnt/nfs nfs nouser,atime,auto,rw,dev,exec,suid 0 0
```

**MANUAL QNAP:**

```
IP_ADDRESS/Storage /mnt/nfs nfs nouser,atime,auto,rw,dev,exec,suid 0 0
```

**MANUAL\_QNAP\_SMBCIF:**

```
IP_ADDRESS/Storage /mnt/smb cifs username=,password=,nofail,x-systemd.automount,x-systemd.requires=network-online.target,x-systemd.device-timeout=1 0
```

**MANUAL NFS:**

IP ADDRESS/Storage /mnt/nfs add parameters

**MANUAL SMB:**

IP ADDRESS/Storage /mnt/smb add parameters

LMS is available on port 9000, as well as in iMM.

NAS

Select NAS: 

QNAP/Storage - NFS

Select the type of sharing with NAS

Path: **[IP address]**:/**[Folder]** /mnt/nfs nfs nouser,atime,auto,rw,dev,exec,suid 0 0

IP address:

Folder: 

Storage

save

check

delete

Settings

Squeezebox server: 

192.168.88.140

Absolute path to Music directory for squeezebox server: 

/music/MP3/

Squeezebox server username: 

admin

Squeezebox server password: 

12345

Sonos - SMB IP:

Sonos - SMB music folder:

update

- Spotify**

Used to set the bridging of streaming audio from Spotify to LARA devices.

The CS will be visible in the Spotify Application as a Spotify Connect device where audio can be played.

This service is only available to users with Spotify premium accounts.

The screenshot shows the 'Spotify' configuration page. It includes a 'Label' field set to 'Conn-Server', a 'Server IP address' field set to '192.168.88.109', and a 'LARA IP address' section with five numbered input fields. The first two are filled with '192.168.88.245' and '192.168.88.60'. Below these is a note: '\* For apply Label changes make reboot.' and an 'update' button. The 'Spotify services' section shows three services, all set to 'active', with 'enable' and 'disable' buttons at the bottom. Callouts provide additional context: 'The name that will be displayed in the Spotify application for the newly available Spotify Connect device' points to the Label field; 'CS IP address - is automatically filled' points to the Server IP address field; 'Ability to enable or disable the service on CS' points to the Spotify services section; and 'Activation / deactivation Spotify Connect to CS' points to the enable/disable buttons.

- Label - the name change only takes effect after Reboot CS.

- Server IP address - check the correct IP address entry, if the IP address is not entered correctly, LARA cannot play the stream!

- LARA IP address - up to 5 IP addresses can be entered.

## • Bookmark HA-BUS

Bookmark HA-BUS can be used for interconnection of iNELS3 BUS and a decentralized control system KNX/EIB, which allows control from the iHC app. You can add more iNELS3 central units in this folder.

**In the last hardware revision of Raspberry Pi 3 it is possible to add up to 8 iNELS3 central units**

### Requirements for interconnection with KNX / EIB:

- KNX Router
- Export group addresses from the program ETS – 5

In iNELS3, enter the IP address of the iNELS3 central unit, the password (optional) and a note; adding is completed with the Add button.

Once added, the export is downloaded automatically from the central controller and the prefix "inels3" is added. The last character of the prefix (A-H) specifies the insertion order for the resolution between the central units.

The screenshot shows the iNELS3 configuration window. Callouts include:
 

- Enter the communication port**: points to the ASCII port field (1111).
- Name of CU3 added**: points to the Note field (House).
- Adds the configured CU3**: points to the Add button.
- IP address of the CU3 central unit**: points to the IP of iNELS3 CU field (192.168.88.57).
- Name – configuration in IDM**: points to the Password field.
- Displays the current status of the set CU3**: points to the Check iNELS3 CU button.
- Example of Prefix**: points to the Prefix field (inels3A) in the table below.
- IP address CU**: points to the IP address field in the table.
- User note**: points to the Note field in the table.
- Prefix inels3A**: points to the Prefix field in the table.
- Reset the export of the selected CU**: points to the reload iNELS3 export (is3) button.
- Remove CU from the list**: points to the Remove button.
- Check state**: points to the Check state button.

Prefix	IP address	ASCII port	Note	
inels3A	192.168.88.57	1111	House	is3

For KNX / EIB, the KNX the Gateway must also be filled in. Where you can enter the IP address of the gateway KNX router and save by using the Save button. Then, select the group address export file (see KNX export group address) and export.

The Export group addresses are done in accordance with the ETS format: 1/1 (Name / Add.) Separate each of them by using semicolons.

Before inserting the export it need to be more adapted behind the semicolon refill data type according element values (True, False, 0-255, 0-100) see. KNX DPT link.

Is used to set pairs of KNX device and CU3 device, which will synchronize with each other.

The screenshot shows the KNX - CU3 synchronization window. Callouts include:
 

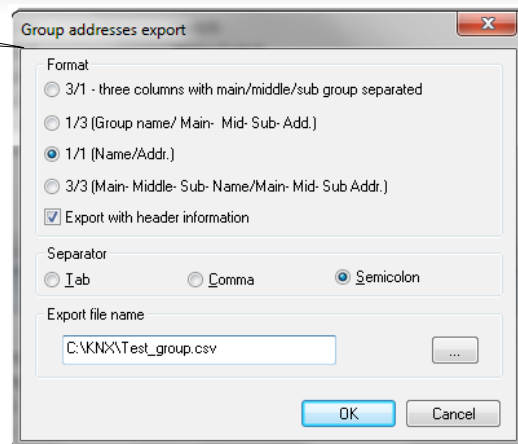
- KNX element selection**: points to the KNX device dropdown (knx\_Auto/Man).
- Selecting an element from the central unit**: points to the CU device dropdown (inels3A\_AnalogovaSkupina).
- List of created pairs**: points to the table below.

KNX device	CU device	
knx_Luster	inels3A_SA3-06M_RE4_000020	Remove

Example export group addresses from ETS:

Example of data in a supplemented file Test\_group.csvs:

```
"Group name";"Address"
Dimming;0/-/-
New Middle Group;0/0/-
Dim A;0/0/1;5
Dim B;0/0/2;5
Switching;1/-/-
New Middle Group;1/0/-
D;1/0/0;1
switch A;1/0/1;1
switch BCD;1/0/2;1
Shutters;2/-/-
New Middle Group;2/0/-
Shutters1;2/0/1
Shutters2;2/0/2
Sensors;3/-/-
New Middle Group;3/0/-
Temperature;3/0/0;9
```



A switch in example; 1/0/1; 1 has value as shown in Table 1 behind a semicolon (True, False) means that a switch.

Data type	Data	Type	Value
1	1 bit	bool	True   False
5	8 bit	num	0-255
5.001	8 bit	num	0-100
6	8 bit	num	-128 +127
232	3 byte	num	RGB [0,0,0] - [255,255,255]

On the Configurations tab, make sure the export listing contains the KNX elements. If so, in the Rooms tab, paste the KNX elements into the selected room. Put the KNX elements into the room in the same way as the iNELS3 elements, the KNX devices have a knx\_ prefix.

! This manual describes the interconnection of iNELS3 and KNX systems, not the KNX element settings.

! If the central unit does not have a password set, leave the insertion field blank.

i Names of elements in the room without the prefix will be converted automatically.



## • Bookmark RF Configuration

For communication between wireless RF devices and the Connection server an eLAN-RF-003 or eLAN-RF-Wi-003 smart box is required. Enter the eLAN-RF IP address.

! RF elements are assigned to eLAN-RF via the iHC-MAIRF application or via the eLAN-RF web interface (see the iHC-MAIRF manual)

For authorization purposes on eLAN-RF, input boxes are for username and password. Click the **Apply changes** button to reset the process and apply the changes.

! For control of RF elements enable in the iHC-MA, iHC-TA settings.

## • Bookmark Logging

RF logging for logging changes on RF eLAN. You can add more eLAN-RF or eLAN-RF-Wi.

After adding eLAN-RF, click **Apply changes** to show changes. After loading elements from eLAN-RF, you can select an element, name it and add it to the monitored elements. **Apply changes again. Data from the tracked item can be downloaded via Download or deleted via Clean.**

### CU3 logging for logging changes at CU3.

You can select an element, name it and add it to the elements you are watching. **Apply changes.** Data at the tracked item can be downloaded via **Download** or deleted via **Clean**. All tracked items can be removed via **Remove all**. The **Download** section also serves for downloading data. Wherein, the selected element is referenced along with the time period.

### Configuration of the central unit

IP address: 192.168.5.250  
Submask: 255.255.255.0  
Gateway: 192.168.5.1  
DNS 1: 8.8.8.8  
DNS 2: 4.4.4.4  
NTP server: 147.228.57.10  
Time zone: (UTC+01:00) Amsterdam

Configuration of third-party communication  
Port: 1111  
Mode: Remote + ID  
Separator: [32]  
Numeral system: Decimal

☐ Trouble\_OwerTempErrorBack  
☒ Sensor\_Change  
☐ CardIN\_ChangeEnable  
☐ CardIN\_Change  
☐ Timer\_Tick  
☐ Timer\_Elapsed  
☐ Counter\_Change  
☐ Counter\_ReachedValue  
☐ GSM\_IncomeCall

☐ GSM\_EndIncomeCall  
☐ GSM\_IncomeSMS  
☐ GSM\_EndIncomeSMS  
☐ GSM\_OutcomeCall  
☐ GSM\_EndOutcomeCall  
☐ GSM\_OutcomeSMS  
☐ GSM\_EndOutcomeSMS  
☐ Email\_OutcomeEmail  
☐ Email\_EndOutcomeEmail

CU time: 29.08.2019 13:43:50

Save to the central unit

NOTE: property of any monitored device represented in CU3 configuration settings, e.g. Sensor\_Change (e.g. temperature change), has to be checked in order to allow Connection Server logging feature to store required data. All units which uses selected property will provide event data regularly.

## • Bookmark Zones

Bookmark Zones is used to configure the zones for the Connection server. With the possibility to add multiple zones.

To insert a fill zone name, IP address and choose a zone type change switch to yes.

Name of zone  
IP address zone  
Create a set zone  
Viewing created zones

### New zone

Name  
IP address  
Is it squeezebox ? no  
Is it giom ? no  
Is it misol ? no  
Is it sonos ? no  
Is it virtual zone ? no

Select the zone type

create

### Defined zones

Name	IP address	Is squeezebox	
Giom	10.10.5.125	no	<u>Remove</u>
Misol	192.168.88.63	no	<u>Remove</u>

Remove zone

! Connection Server only allows the insertion of GIOM 3000 weather station.

! If you set your password in the GIOM administration, be sure to check Except - status.xml

If GIOM weather station does not show up-to-date measured values (in iHC application or in web-interface of weather station:

IP\_ADDRESS\_WEATHERSTATION/status.xml), then it is needed to upload an updated firmware file 2.0.3 which can be found in Partners section at [www.inels.com/partners](http://www.inels.com/partners).

## • EventScript

In bookmark EventScript creates events, based on which, the pre-set start script. The event is performed if the element reaches the set value of the event. You can use different kinds of elements relay, DAC. Etc.

In menu Triger Rules you can create events, based on which the script runs.

You can select a CU for which you can set a rule. If you enter the IP address of the CU, the **Configuration tab** is displayed by default. If you enter the CU addresses in the **HA Bus** tab, you will be able to select a particular CU, ie **inels3A**, **inels3B**, **inels3C**, etc.

! EventScript uses ASCII protocol, which must be turned on in IDM program, into a free port and in bookmark Configuration in iMM CC insert ASCII port for communication.

Depending on the setting ASCII protocol set value in hex or DEC example. 50 in (HEX) is 80 (DEC).

EventScript run with all device modes (HEX, HEX with prefix and DECIMAL)

NOTE: properties in CU3 configuration settings (located in iDM), more precisely DIGITAL\_OUT\_SwitchOn and DIGITAL\_OUT\_SwitchOff (system bits belong to digital outputs), have to be checked in order to allow sending script trigger represented by changing of system bit state.

### Tracking Element Value in Script:

To see the value of the element, insert "?" in the Value field, and then read it through the sys.argv [0] system with argument 0. The script will run periodically after 5 seconds, and the script will respond to the changing value of the variable.

### Reading the value of the element in the script:

To read the value of the element, insert "?" in the Value field, and then read it through the system sys.argv [0] with argument 0. The script will run periodically after 10

seconds and dynamically respond to changes in the element's value based on logic in the script. This function can be used, for example, to start the heat recovery depending on the temperature of the sensor.

When setting the air conditioner trigger, the event is triggered when the element state changes from 0 to 1.

The screenshot shows the 'AC Trigger Rules' configuration window. It includes dropdown menus for 'AC' (set to 'Atrea'), 'CU device' (set to 'SYSTEMBIT0000'), and 'Function' (set to 'power (rw)'). Below these are 'Add' and 'Restart service' buttons. A table titled 'AC Triggers' lists three configured triggers. Callouts identify the 'Air conditioning list' (pointing to the AC dropdown), 'CU device (Only system int / bit)' (pointing to the CU device dropdown), 'Features available for specific air conditioner' (pointing to the Function dropdown), 'Save the Trigger' (pointing to the Add button), 'Restart service' (pointing to the Restart service button), and 'List of defined triggers' (pointing to the AC Triggers table).

AC name	CU device	AC function	
Atrea	SYSTEMINTEGER0002	cur_temp ( r )	Remove
Atrea	SYSTEMINTEGER0003	mode ( rw )	Remove
Atrea	SYSTEMINTEGER0000	power ( rw )	Remove

**AC Trigger Rules** used to pair the CU element and AC function. This way you can store AC states to CU and control AC from CU.

**AC:** selects the assigned unit.

**CU device:** select the element you want to assign to that AC function.

**Function:** select the air conditioning function.

Description of AC Features:

- power (rw) - 0 and 1 can be used to monitor whether AC is on, with AC enabled (outside Area - 0-100 range)
- on / off (t) - turns on / off when changing from 0 to 1
- set\_temp (rw) - to monitor the desired temperature in AC with the option to set the temperature
- increase / decrease\_temp (t) - change from 0 to 1 to increase / decrease the temperature by 1 ° C
- cur\_temp (r) - to monitor the current temperature in AC
- mode (rw) - to monitor the current mode in AC with the option to set the mode
- control mode (rw) - to monitor the current control mode with the option to set it
- ventilation\_with\_timeout (w) - set the ventilation for the desired time (in minutes), after the set time elapses, the AC returns to its original state
- heating season (rw) - to monitor whether the heating season is set up

Feature Types:

- (r) - AC reading only and CU write
- (w) - only write status from CU to AC
- (rw) - bidirectional write (combination (r) and (w))
- (t) - a trigger that composes to execute specific functions (activation is performed when the CU element state changes from 0 to 1)

Note: AC write is only done when the CU element state changes.

## Control and read AC status via CU

Working with **mode / fan speed / control\_mode** works with tables below that match the numeric value and **mode / fan speed/ control\_mode**.

### Mode:

Value	Mode
0	unsupported
1	unknown
2	off
3	auto
4	heating
5	cooling
6	ventilation
7	dry
8	periodic_ventilation
9	periodic
10	night_precooling
11	balancing
12	overpressure
13	service

### Supported Modes for Individual AC:

AC	Mode
LG	auto, heating, cooling, ventilation, dry
CoolMaster	auto, heating, cooling, ventilation, dry
Atrea	off, auto, ventilation, periodic_ventilation, periodic, night_precooling, balancing, overpressure
Intesis	auto, heating, cooling, ventilation, dry
Nilan	off, auto, heating, cooling, service
AirPohoda	unsupported
Universal	off, heating, cooling
Daikin	auto, heating, cooling, ventilation, dry
Mitsubishi	auto, heating, cooling, ventilation, dry
Cairox	unsupported

## Fan speed:

Value	Fan speed
0	unsupported
1	unknown
2	off
3	auto
4	level_1
5	level_2
6	level_3
7	level_4
8	level_5
9	level_6
10	level_7
11	level_8
12	level_9

## Supported speeds for each AC:

AC	Fan speed
LG	auto, level_1, level_2, level_3
CoolMaster	auto, level_1, level_2, level_3, level_4
Atrea	unsupported
Intesis	auto, level_1, level_2, level_3, level_4, level_5, level_6, level_7, level_8, level_9
Nilan	off, level_1, level_2, level_3, level_4
AirPohoda	unsupported
Universal	unsupported
Daikin	level_1, level_2, level_3
Mitsubishi	auto, level_1, level_2, level_3, level_4
Cairox	auto, level_1, level_2, level_3

## Set / Cur temp:

For temperatures, a multiple is used to maintain accuracy 100:

$$\text{temp} * 100 = 21,50 * 100 = 2150$$

## Control mode:

Value	Control mode
0	unsupported
1	unknown
2	manual
3	auto
4	temporary

## Supported control modes for each AC:

AC	Control mode
LG	unsupported
CoolMaster	unsupported
Atrea	manual, auto, temporary
Intesis	unsupported
Nilan	unsupported
AirPohoda	unsupported
Universal	unsupported
Daikin	unsupported
Mitsubishi	unsupported
Cairox	unsupported



## Direction:

Value	Direction
0	unsupported
1	unknown
2	auto
3	swing
4	position_1
5	position_2
6	position_3
7	position_4
8	position_5
9	position_6
10	position_7
11	position_8
12	position_9

## Supported slat directions for each AC:

AC	Direction
LG	unsupported
CoolMaster	unsupported
Atrea	unsupported
Intesis	unsupported
Nilan	unsupported
AirPohoda	unsupported
Universal	unsupported
Daikin	swing, position_1, position_2, position_3, position_4, position_5
Mitsubishi	auto, swing, position_1, position_2, position_3, position_4, position_5
Cairox	unsupported

- **Bookmark A/C**

Used to define the air-conditioning or heat recovery by third parties and their control through the iHC application.

**Supported are:**

LG Climis  
Coolmaster, CoolMasterNet  
Air Pohoda  
Atrea  
Universal 0-10V

LG Climis via PI-485 eLAN-RS485/232 or Advantech Adam 4571



CoolMaster series 1000D, 2000S, 3000T, 4000M, 6000L, 7000F, 8000HM, 9000M, CoolMasterNet over Advantech Adam 4571



**CoolMasterNet**

Daikin	(DK)	Mitsubishi Electric	(ME)
Fujitsu	(FJ)	Mitsubishi Heavy	(MH)
Gree	(GR)	Panasonic(PN)	
Hitachi	(HT)	Samsung (SM)	
Intensity	(MD)	Sanyo (SA)	
Kentatsu	(KT)	Toshiba(TO)	
LG	(LG)	Trane (TR)	
Midea	(MD)	Compatibility: indoor, outdoor units.	

**Others:**

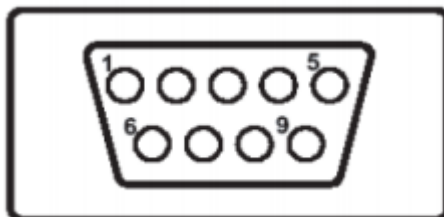
- Atrea Duplex 180 EC4 P (0-10), Duplex 180 EC4 P (0-100)
- AiRPohoda by Adam 4571
- Universal 0-10V by DAC 0-10V



## ADAM-4570\_4571

### RS-232 Pin order

Pin. No.	Description
Pin 1	DCD
Pin 2	Rx
Pin 3	Tx
Pin 4	DTR
Pin 5	GND
Pin 6	DSR
Pin 7	RTS
Pin 8	CTS
Pin 9	RI



### RJ-48 Pin order - RS-422

Pin. No.	Description
1	Tx -
4	Tx +
5	GND
7	Rx +
9	Rx -

### RJ-48 Pin order - RS-485

Pin. No.	Description
1	Data -
4	Data +
5	GND

#### a) LG Climate control

It is used to define air conditioning and control it through the iHC application. Supported communication card for LG air conditioner is PI485. The air conditioner must be connected via an eLAN-RS485/232 or Advantech Adam 4571.

### LG clim

Name  


Set name air-conditioning

Type  

LG PI485

Select type of communication gateway

Connection (ip\_address:port)  
 : 

Set IP address and port

Group  


Select group

Unit  


Select number air conditioning

save LG

Save settings

## b) CoolMaster

Is used to define air conditioning via the Coolmaster universal control unit and control it through the iHC application.

First step:

First, set the Coolmaster control unit according to the manufacturers manual. (Usually via DIP switches inside the unit) Setup converter LAN-serial485 (Recommended converter: Adam 4571) according to the Coolmaster manual and connect the converter to the CoolMaster control unit.

Test communication:

If the air conditioner control unit is properly connected to the Coolmaster the display alternatively displays the temperature and mode.

Second step:

Moving on to set the air conditioner in the web interface <http://localhost:8080/clims> and fill name and IP address of the convertor and press the Save button, the settings wait for UID to load the air conditioning in system. Now you can select the number of units and save the CoolMaster unit.

❗ If unsuccessful use the reload button and check the air conditioning loaded UID communication converter with the Coolmaster according to the manual

For older Coolmasters version is necessary to set convertor to appropriate port:

Coolmastr type:	1000D, 2000S, 3000T, 4000M, 6000L, 7000F, 8000I(HM), 9000M
Convertor:	Adam 4571 nebo Gnome 485 Port: 10001
	CoolMasterNet (default setup) Port: 10102

Perform the function check via utility ncat command format: ncat IPADRESA PORT

Example ncat in terminal:

Command	ncat 10.10.10.111 10102	Significance	Connection to Cooler Master / Convertor
Answer	>		Returns the character command line
Command	stat2		List states Air conditions
Answer	000 OFF 25C 27,80C High Heat OK 0		Return state Air condition

For windows you can use SPU (Serial port utility)

📖 Commands and pin setup for cable connection of air conditioning can be found in the reference manual for example: CoolMasterNet

❗ Maximal number of simultaneous connections for CoolMasterNet is 4, only 2 for the Adam 4571 convertor.

## c) Air Pohoda

Used to define air recovery, called Air pohoda and control through the iHC application.

The recuperation must be connected via an eLAN-RS485/232 or Advantech Adam 4571.

## d) Atrea

Used to define air recovery called Atrea and control through the iHC application.

New **Duplex EC RD5**. Additionally, you can enter more Atrea units and enter the unit name.

The screenshot shows the 'Atrea' configuration window. It contains the following fields and callouts:

- Name:** A text input field with a callout: 'Enter the name of the unit'.
- Type:** A dropdown menu showing 'Duplex 180 EC4.D P(0-10)' with a callout: 'Select unit type'.
- IP address:** A text input field with a callout: 'Enter the IP address of the unit'.
- Temperature OUT:** A dropdown menu showing 'VZT - Internal sensor' with a callout: 'Outside temperature source for regulation'.
- Temperature IN:** A dropdown menu showing 'CP - CP-Touch' with a callout: 'Internal temperature source for'.
- save Atrea** button.

### Indoor Temperature Sources:

CP - The indoor air temperature is measured by a sensor built into the CP-Touch controller

The T-ETA - indoor air temperature is measured by a sensor built into the unit on the exhaust air outlet

TRKn - indoor air temperature is measured by sensor connected to RD5-K module (optional unit with RD5 control unit)

CU - indoor air temperature is supplied by the superior system (central unit)

### Outdoor Temperature Sources:

HVAC - Internal sensor - The outdoor air temperature is measured by the unit's internal sensor

CU - outdoor air temperature is measured by superior system (central unit)

## e) Universal 0-10V

Used to define universal air conditioning using DAC 0-10 V and control through the iHC application.

The screenshot shows the 'Universal 0-10 V' configuration window. It contains the following fields and callouts:

- Name:** A text input field with a callout: 'Set name climatization'.
- Maximal temperature:** A text input field with a callout: 'Set maximum temperature'.
- Minimal temperature:** A text input field with a callout: 'Set minimum temperature climatization'.
- Temperature control:** A dropdown menu showing 'DAC3-04M\_OUT3\_01013d'.
- Heating:** A dropdown menu showing 'DAC3-04M\_OUT3\_01013d' with a callout: 'Select control over DAC'.
- Cooling:** A dropdown menu showing 'DAC3-04M\_OUT3\_01013d'.
- Thermometer:** A dropdown menu showing 'DAC3-04M\_OUT3\_01013d' with a callout: 'Select temperature sensor'.
- save Universal** button with a callout: 'Save settings'.

## f) Nilan settings

Used to add Nilan ventilation units connected to the eLAN-RS485/232 via the RS485 interface

Connection server communicates with eLAN-RS485/232 using Ethernet.

The screenshot shows the 'Nilan Settings' web interface. It has two main sections: 'Nilan Settings' and 'Nilan unit'.  
 - In the 'Nilan Settings' section, there is a text input field for 'Connection (ip\_address)' with a callout pointing to it saying 'IP address eLAN-RS485/232'. Below it is a 'save Nilan settings' button.  
 - In the 'Nilan unit' section, there is a 'Name' text input field with a callout pointing to it saying 'Device Name'.  
 - Below the 'Name' field is a 'Device ID' dropdown menu with a callout pointing to it saying 'List of created devices in eLAN-RS-485'.  
 - Below the 'Device ID' is an 'Actual temperature' dropdown menu with 'T1' selected. A callout points to it saying 'Selection of input on the Nilan unit to which the current temperature sensor is connected'.  
 - At the bottom of the 'Nilan unit' section are two buttons: 'reload' and 'save Nilan unit'.

## g) Intesis Box

It is used to control air conditioners supported by the Intesis box.

**Name** - Intesis unit name.

**IP address** – field for entering the IP address of the unit

The screenshot shows the 'Intesis Box' web interface. It has two main input fields: 'Name' and 'IP address'.  
 - The 'Name' field contains the text 'Intesis IMM'. A callout points to it saying 'Enter the name of the'.  
 - The 'IP address' field contains the text '192.168.1.6'. A callout points to it saying 'Enter the IP address of the'.  
 - Below these fields is a 'save Intesis Box' button.

## • Bookmark ESS

It is used to connect security systems (Jablotron, Paradox) with the eLAN-RS485/232 to INELS.

It is possible to establish individual functions of the devices connected to the CU Central Unit when an alarm signal is sent from the individual detectors.

- Security Settings for Jablotron:

Used to upload an export from a security system. Export is allowed for Jablotron system and only in CSV format.

Defining Triggers for Jablotron Security System:

Trigger is used to trigger a SET or SIGNAL (Trigger type) function that is triggered by the Trigger on change of the selected Detector in the selected Area while the Zone is in the defined state (Check states).

You can select more than one monitored zone status.

To define triggers for running a SET function:



When uploading an export, it is no longer necessary to select the section and detector number. Select the export detector.

**Triggers**

Check area states:

READY  
ARMED\_PART  
ARMED  
SERVICE

Detector:

Bezdrátový magnetický detektor P5

Trigger on:

off

Trigger type:

set

CU3 devices:

Add CU3 device
Delete CU3 device

CU3 device:

(UID: 16908289) SA3-06M\_RE1\_000020

Value:

0

Save

Defining triggers to start the function of the type of SIGNAL:

**Triggers**

Area:

Area 2

Check states:

READY  
ARMED\_PART  
ARMED  
SERVICE

Detector:

Detector 2

Trigger on:

on

Trigger type:

signal

Signal time [s]:

5

CU3 devices:

Add CU3 device
Delete CU3 device

CU3 device:

(UID: 16908293) SA3-06M\_RE5\_000020

Value:

1

Value (signal end):

0

Save

Set the value of the component when the alarm function is activated

Selection of an component from the CU central unit

Set the duration of the signal

Component set value after alarm time (alarm)

List of pre-defined triggers.

Area: 4	States: READY,OFF	Detector: 10	On: on	Type: set	<a href="#">Edit</a>	<a href="#">Remove</a>
Area: 10	States: ARMED	Detector: 4	On: on	Type: signal	<a href="#">Edit</a>	<a href="#">Remove</a>
Area: 4	States: READY,OFF	Detector: 10	On: off	Type: set	<a href="#">Edit</a>	<a href="#">Remove</a>

- Define the storage state to CU3

Define saving the zone status to CU3 if the zone is in the selected state.

**Save to CU3**

Type: **STATE** (Select storage type (zone or detector status))

Area: **Area 1** (Zone area)

State: **READY** (Selection of monitored zone)

CU3 device: (UID: 33751040) SYSTEMBIT0000 (Selecting a component from CU3 where to save whether the zone is in the selected state)

**Save**

Area: 1	State: READY	CU3 Device: (UID: 33751040) SYSTEMBIT0000	<a href="#">Remove</a>
Area: -	Detector: 1	CU3 Device: (UID: 33751042) SYSTEMBIT0002	<a href="#">Remove</a>
Area: 2	State: ARMED	CU3 Device: (UID: 33751041) SYSTEMBIT0001	<a href="#">Remove</a>
Area: 3	State: ARMED	CU3 Device: (UID: 16908293) SA3-06M_RE5_000020	<a href="#">Remove</a>
Area: -	Detector: 2	CU3 Device: (UID: 33751043) SYSTEMBIT0003	<a href="#">Remove</a>
Area: -	Detector: 3	CU3 Device: (UID: 16908294) SA3-06M_RE6_000020	<a href="#">Remove</a>

List of pre-defined states of CU3

Defining the storage status of the detector in CU3.

**Save to CU3**

Type: **DETECTOR** (Select storage type (zone or detector status))

Detector: **Detector 1** (Detector selection)

CU3 device: (UID: 33751040) SYSTEMBIT0000 (Selecting a component from CU3 where to store the)

**Save**

Area: 1	State: READY	CU3 Device: (UID: 33751040) SYSTEMBIT0000	<a href="#">Remove</a>
Area: -	Detector: 1	CU3 Device: (UID: 33751042) SYSTEMBIT0002	<a href="#">Remove</a>
Area: 2	State: ARMED	CU3 Device: (UID: 33751041) SYSTEMBIT0001	<a href="#">Remove</a>
Area: 3	State: ARMED	CU3 Device: (UID: 16908293) SA3-06M_RE5_000020	<a href="#">Remove</a>
Area: -	Detector: 2	CU3 Device: (UID: 33751043) SYSTEMBIT0003	<a href="#">Remove</a>
Area: -	Detector: 3	CU3 Device: (UID: 16908294) SA3-06M_RE6_000020	<a href="#">Remove</a>

When uploading an export, it is no longer necessary to select the section and detector number. Select the export detector.

**Save to CU3**

Type: **DETECTOR**

Detector: **Akustický Detektor rozbití skla P6**

CU3 device: (UID: 16908411) Controller\_Window-Detector-DIN\_01296B

**Save**

Area: -	Detector: Bezfázový dvouzónový PIR P10	CU3 Device: (UID: 16908290) SA3-06M_RE2_000020	<a href="#">Remove</a>
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- Paradox security system settings

The Paradox setting is the same as the Jablotron setting. They differ only in the type of zone status.

## • Bookmark Rooms

Bookmark Rooms is used to configuration of the rooms.cfg, for loading the iHC application (more information in the iHC manual). Rooms are actually "virtual rooms" (groups), which have the option to group the icons and zones for one or more screens.

First enter the room name, save it with the **Add** button.

! Only A-Z, a-z, 0-9, -, \_ can be used for the room name.

Using the **upload** and **download** buttons, you can download or record the rooms.cfg (bookmark of the already created rooms).

**New room**

Set name of room: Name [text input]

Set password for room: Protect by password ☐

Create Room: Add

File upload: Upload

Download File: Download

Saved room: [table]

Name	Edit	Up	Down	Set password	Rename	Remove
_global_	Edit					
INELS Bus	Edit	Up	Down	Set password	Rename	Remove

Remove selected room: [button]

Edit room: Edit

Set the room password: Set password

Rename Room: Rename

Using the Edit command, the menu adds the desired devices (scenes, zones ...) to the room.

**Add new device**

Recommended length of the name is 8 characters. If the length is longer then it does not display correctly.

Select Type: Type [airing]

Select the row and column: Row [2], Column [1]

Insert name device: Name [text input]

Switch Icon read only yes/no: read only: no

Select specific device: Attributes [Controller\_Actual-Ther]

Add device: Add

View saved devices: [table]

Row	Name	Type	Column	Attributes	Action
1	hall1	lamp	1	device: SA3-06M_RE1_013AB9 read only: no	DOWN REMOVE
6	hall2			absolute path /etc/imm/ShuttersUP.py dev_0 SA3-06M_RE2_013AB9 remove	DOWN REMOVE

Changing device views: [button]

an optional absolute path to a script that ends with .py or .sh

Remove device: Remove

Move Up or Down device: [button]

Click on the line to display the editing menu: [button]

**Thermo meters**

No thermo meters defined

**Zones**

No zones defined

Save settings: Save

Device: RFDA-73MRGB\_Red\_00A8AE

Cancel Confirm

! Device type - the selected icon filters the elements (for example, the Lamp type filters the elements on the dimmers, the scene displays the field for writing the absolute path ...).

i By switching the Read only function to "yes", the icon will display only the status of the non-controllable element.

Adding a device:

Type Device Type, Name, Row / Column. In the Attributes field, select the device you want from the menu.

Add a scene:

Select a scene in the type. Enter the name, Row / Column. You can use the programmed script to control the scenes, which can trigger various functions defined in it. You must keep an absolute path starting with "/" and ending with the "Python" script that you type in the Attributes field. Multiple elements can be added to the scene.

## • Bookmark Cameras

Bookmark Cameras is used for defining IP cameras, which you want monitor and control by the iHC application.

The HTTP and RTSP ports are only filled in if you have IP cameras configured to access the external network by redirecting ports to the router or using the ONVIF protocol.

- If you connect the camera remotely over the HTTP port, you get to its web interface and you can fully control the camera.
- If via RTSP, then you only get to the camera stream. For more information on setting these ports, see the manual of the selected camera.

If you do not enter the HTTP and RTSP ports they remain with the defaults of HTTP port 80, RTSP port 554.

Supported cameras:

- INELS cam
- AXIS protocol VAPIX2 cameras with firmware version number 4.0.X.X and VAPIX3 with firmware version 5.0.X.X
- Camera with ONVIF protocol profile S certification ONVIF link
- Cameras supporting RTSP stream

In the **New camera** menu, add IP cameras to the Connection server.

Example integration of cam Axis supported ONVIF: connect the camera according to camera manual and create a user for the ONVIF protocol which might be different according to manufacturer. Set the video stream profile: MJPG to MJPEG/JPEG and the second RTSP stream to MPEG4/H264.

**New camera**

Set name for camera	Name	Axis P5534 2	
	IP address	10.10.5.143	Set IP address camera
Set user name	User	OnvifUser	
	Password	•••••	Password
Port for MJPG	Service port	80	
	MJPG port	845	
Port for RTSP stream	RTSP port	5684	
	API	Select API	Select an API
Camera manufacturer	Manufacturer	Axis Communications AB	Camera Type
	Product Name	AXIS M3025-VE Network Camera	
	Firmware version	5.40.5	
The FW version from which the camera manufacturer supports the onvif protocol	Date Certified	8/12/2013	
	create		Create camera

**i** The service port is the ONVIF port usually set on port 80. If the camera is behind NAT it is necessary to redirect to the router and this port otherwise the camera cannot be configured

Ports by default:

Axis - ONVIF HTTP port: iHC: 80 RTSP port - iMM: 554 Application support: iHC-MA, TA, Mi, Ti

Other ONVIF cameras HTTP port: iHC: 554 RTSP port - iMM: 554 Mobile stream support via RTSP: only in app. iHC-MA, TA!

In the Select **stream menu**, select the **pre-set streams** on the camera that is assigned to the iHC mobile app.

The **List of cameras** menu displays saved cameras on the Connection Server and allows you to edit or delete the selected camera from the web interface.

If you are creating an ONVIF camera, the next step will offer the stream to select, possibly editing it, or enter it manually. The manual selection will also be offered if the streams are not successfully downloaded from the camera.

Select stream profile for RTSP

manual load Reloads the profiles from the camera

Stream: rtsp://192.168.1.10:554/

Select stream profile for MJPG

manual load Reloads the profiles from the camera

Stream: http://192.168.1.10:80/video

save

- **Bookmark Miele**

In the menu Miele set the IP address of the Miele gateway device that serves to control remotely appliances over powerline, or ZigBee protocol.

Supported gateways: XGW 2000, XGW 3000 (Firmware 1.1,1.2)

The screenshot shows a configuration menu titled "Miele". It contains the following fields and buttons:

- IP:** A text input field. A callout points to it with the text: "IP address device Miele gateway XGW 2000, XGW 3000".
- E-mail:** A text input field. A callout points to it with the text: "E-mail for notice".
- Relay:** A dropdown menu showing "SA3-06M\_RE3\_000020". A callout points to it with the text: "Relay for restart GW".
- HDO:** A dropdown menu showing "SA3-06M\_RE1\_000020". A callout points to it with the text: "Element Smart grid signal".
- update** button. A callout points to it with the text: "Update settings".

! Set IP address MieleGateWay which is stored in the file /etc/imm/miele

! The GW restart relay is used to switch off / on if the gateway loses the network connection and sends the notification to the user's email.

## • Bookmark Intercoms

In the Intercoms tab, you can specify settings for door intercoms and VoIP accounts for iHC applications.

To create an account for LARA or Mobile, use the **New intercom** account section.

The screenshot shows the 'New intercom account' form. Callouts point to the following fields: 'New contact name' (Contact name), 'SIP name' (Account), 'SIP password' (Secret), 'Streaming video URL of the' (Stream), and 'Add a new contact' (Add button).

To create a door phone account, use the **New intercom** account (for a door phone) section.

Choice of three types of door intercoms (2N, IP-Bold, Dahua).

The screenshot shows the 'New intercom account (for a door phone)' form. Callouts point to the following fields: 'Enter a URL to unlock the lock' (Door lock URL), 'Choice of sound type' (Device type), and 'Add' (Add button).

For the correct function of calls using iHC applications, it is necessary to assign the highest priority to the PCMU codec in the intercom - 2N (Services / Telephone / Audio / Codecs).

When making a door-to-door contact, it is not limited to one door, more can be entered.

New ability to create groups. Create individual contacts, add them to the group. Make a group call name, the call will be applied to all the contacts in the group, who will receive the first call, who will communicate. Contacts are grouped into the group via the **New intercom group**, where all contacts are inserted and separated by commas: **LARA1, LARA2, LARA3**.

The screenshot shows the 'New intercom group' form with fields for 'Group name', 'Accounts', and an 'Add' button.

You can set the maximum ringtone length in the **Asterisk settings** section.

**Apply settings** button activates newly created VoIP accounts and restarts the PBX Asterisk.

The screenshot shows the 'Asterisk settings' section. It includes a 'Ring timeout [s]' field set to 30 with a 'save' button. Below is the 'Upload or download intercoms backup' section with 'Upload' and 'Download' buttons. At the bottom is the 'Update asterisk settings' section with an 'Apply settings' button.



In the list of created contacts, which contact is registered on the SIP server is colour-coded.

Update asterisk settings

Apply settings

Intercom accounts

Contact name	Account	Secret	Stream	Door phone	
Intercom2	Intercom2	asdf		Dahua-VTO2000A	<div>Edit</div> <div>Remove</div> <div>Get 2n config file</div>
Intercom	Intercom	asdf	rtsp://admin:admin@192.168.88.55	Dahua-VTO2000A	<div>Edit</div> <div>Remove</div> <div>Get 2n config file</div>
LARA	LARA	asdf			<div>Edit</div> <div>Remove</div> <div>Get 2n config file</div>
Mobil	Mobil	asdf			<div>Edit</div> <div>Remove</div> <div>Get 2n config file</div>
LARA2	LARA2	asdf			<div>Edit</div> <div>Remove</div> <div>Get 2n config file</div>

Active / Unactive

Intercom groups

Group name	Accounts	
Office	LARA, LARA2,	<div>Remove</div>

- ! The connection server allows you to set up a single door intercom via DTMF on the web interface.
- i Stream for cam add in format rtsp://IPADRESA.
- i Manual link for video intercom the iHC application can be added in the contact intercom field with the IP address in this format: http://IPADRESA/enu/camera640x480.jpg.
- ! The connection server allows only one door intercom to be opened on the web interface.
- i In the case of multiple 2N IP intercoms, all must be set to open as well (User name, Password, Lock code).

## • Bookmark Energy

The Energy module allows recording of consumed energy for a day, week, month and year. Consumed energy is displayed in the iHC application not only in a given quantity but also in financial value in the form of a table or graph.

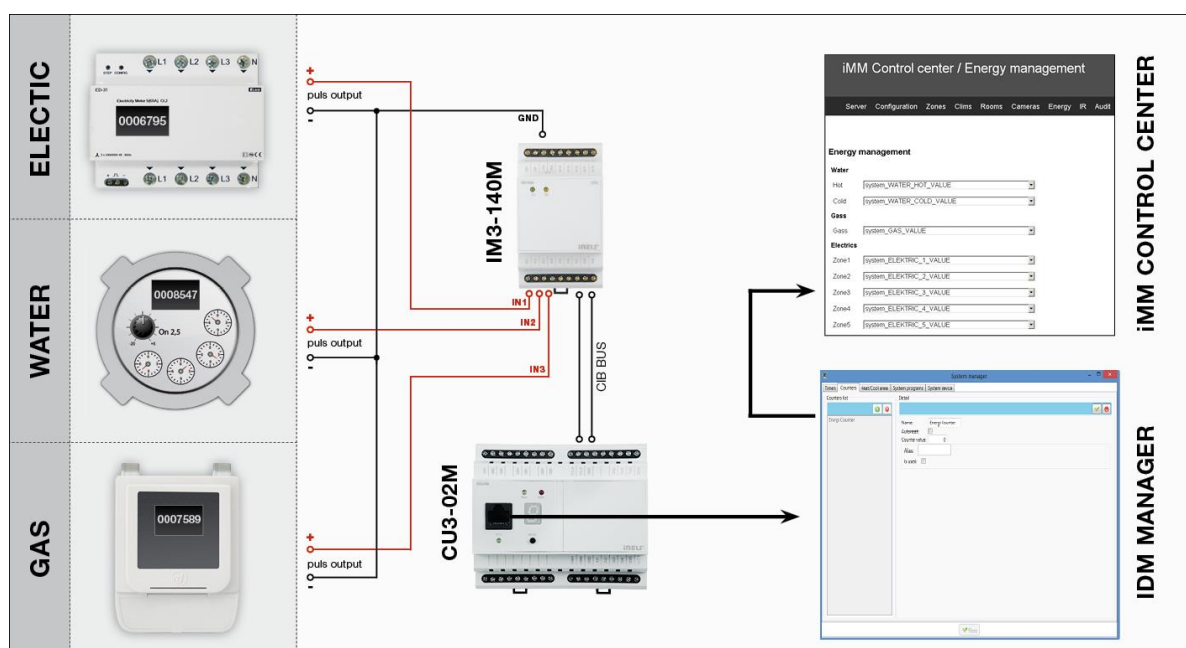
The data is stored on the Connection Server even when the power is off or on.

Energy is recounted based on the amount of impulses that the outputs from meters provide (gas-meters, electrometers, water-meters). Impulses are further processed in an optional input unit of system iNELS (IM2-140M, IM2-20/40/80B) in form of a counter. This value is by means of export.pub transferred to Connection Server where variable is in iMM CC on bookmark Energy assigned to Water/Gas/Electric.

The actual setup conversion of pulses per unit of measure, currency selection and adjustment of the currency / unit is done in the web interface in the Connection Server.

### Connection of electric meter, gas meter or water meter

The connection of a particular meter is executed via the binary input unit. The polarity of the supported meter, i.e. + and - is distinguished. If necessary, observe the polarity and connect the "-" terminal to the GND terminal and the "+" terminal to the IN terminal.



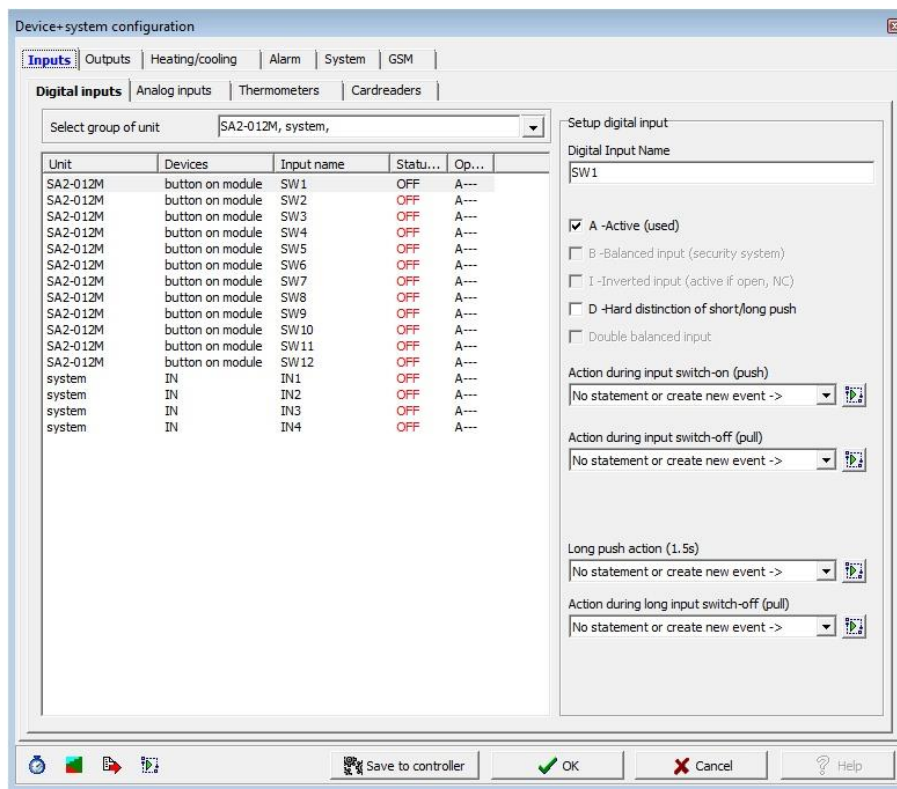
### Settings in IDM2:

1. Click on the System Configuration button (icon of hammer and screwdriver – F11)
2. Select bookmark System -> counters
3. Add counter that you name by energy you want to measure
4. Create a new action that you name e.g. upload electricity
5. Add a command in the action which will be user action -> commands for counters -> increment counter
6. Select counter that corresponds with given action (e.g. for upload electricity you put counter electricity)
7. Add the action created as described above in system configuration to relevant binary input in action line when the input closes
8. Once the file export-pub is created and uploaded to iMM server, in bookmark Energy you can assign in the counter value line (electricity\_VALUE). It must be VALUE in the line.

Creation of counter in iDM2:

Create increment counter action:

Action assignment to binary input where output from measuring instrument is connected



Assign a counter value to the iMM Control Center

### Energy management

**Water**

Water\_hot

Water\_cold

**Gas**

Gas\_elem

**Electrics**

Electric\_zone\_1

Electric\_zone\_2

Electric\_zone\_3

Electric\_zone\_4

Electric\_zone\_5

Select counter for hot water

Select counter for cold water

Select counter for gas

Select counter for electricity meter

Example:

1 kWh = 100,- Kč = 100 pulse  
Base Unit – kWh  
Impulses – 100 per 1 kWh  
Price – 1 per 1 impulse

To create a counter in IDM3, see Create counter IDM3

## a) Energy management

In the Energy Management menu, select binary inputs for WATER, GAS, and ELECTRICITY and allocate units and impulses to them.

### Energy management

**Water**  
Water\_hot   
Water\_cold

**Gass**  
Gass\_elem

**Electrics**  
Electric\_zone\_1   
Electric\_zone\_2

Select counter for hot water

Select counter for cold water

Select counter for gas

Select counter for electricity meter

Base Unit

For the Z2 meter, the price for the specified number of pulses

Electric

Label:  custom name

Base unit: ☐ kWh ☐ MWh ☒ other  Option to enter your own unit

Z1 Price:  per  Impulses per  E  
Z2 Price:  per  Impulses per  E  
Z3 Price:  per  Impulses per  E  
Z4 Price:  per  Impulse per  E  
Z5 Price:  per  Impulses per  E

The number of pulses set for loading units

Number of units in pulse rate ratio

Base Unit

Water

Label:  custom name

Base unit: ☐ l ☐ hl ☐ m3 ☐ Gallon UK ☐ Galon US ☒ other  Option to enter your own unit

Impulses:  per  W

Price:  per  Impulses

Base Unit

Gass

Label:  custom name

Base unit: ☐ m3 ☒ other  Option to enter your own unit

Impulses:  per  G

The number of pulses set for loading units

Price for 1 pulse

Price:  per  Impulses

Currency:

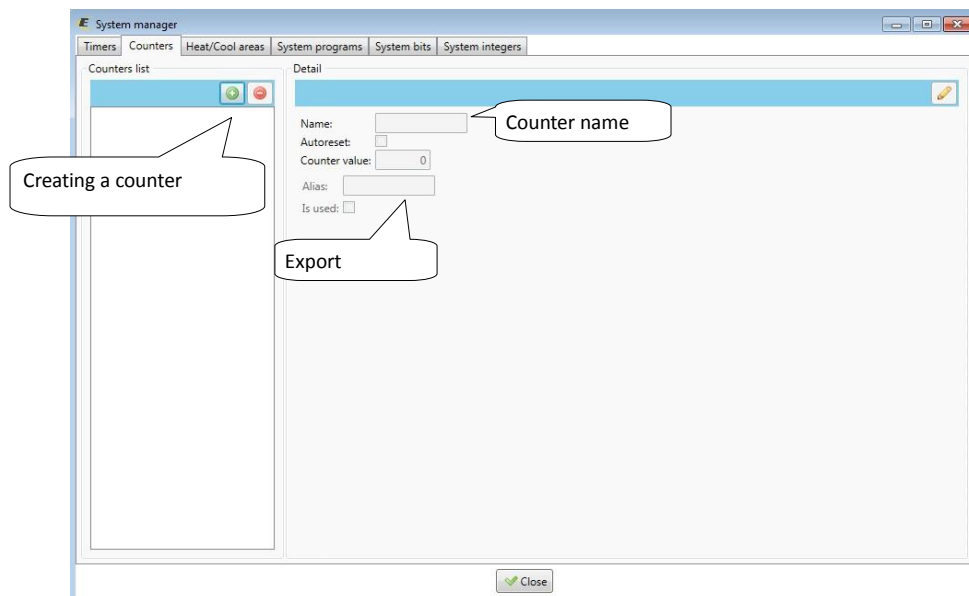
Choice of currency

To create a counter, see the Energy tab

## b) Creating counters (counters) in IDM3

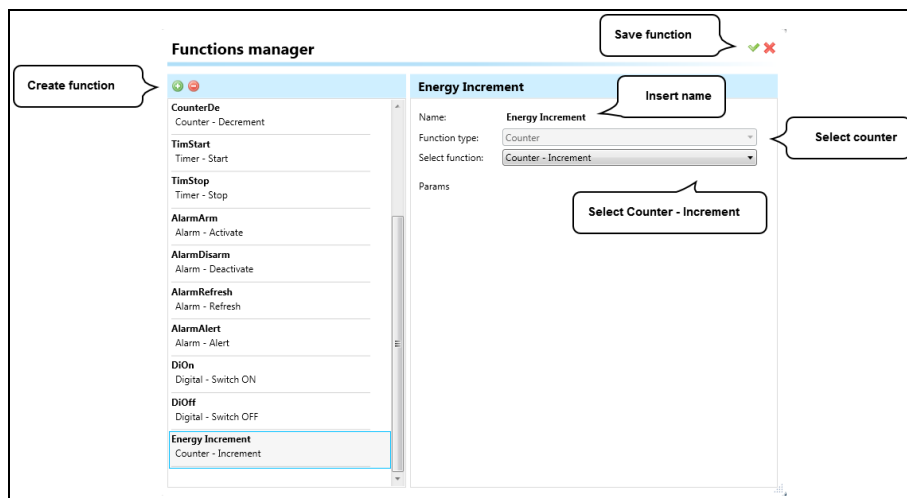
Creating a counter in IDM3

Managers tab, select the System Manager and go to the tab Counters where you create a counter name. Click the + icon to fill in the name and "tick" the item **Apply to export**.



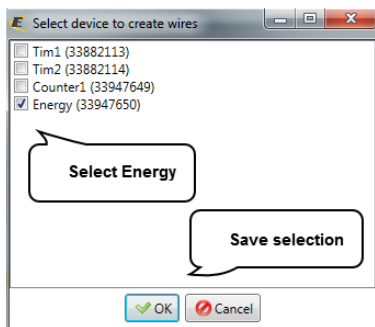
Creating functions for counter

In the **Wires** tab, select the **Function Manager** option. Here you create a function named Energy Increment (the function type is **Counter**).

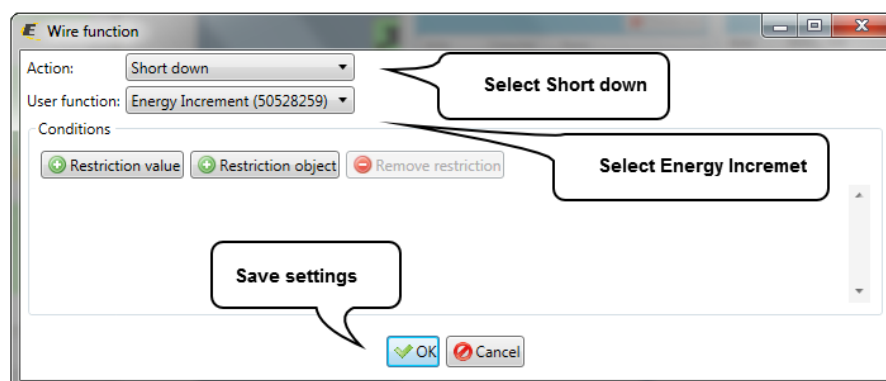
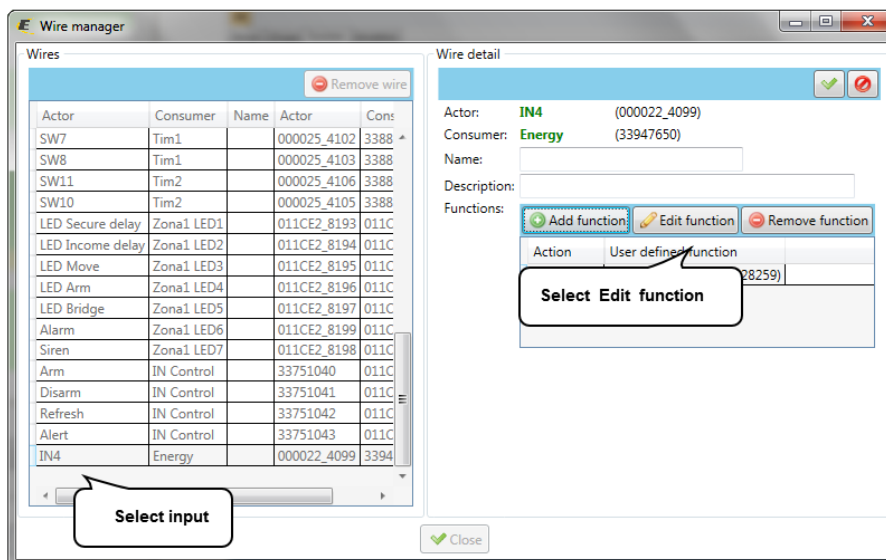


Move the switch and central units to the desktop and double click on switch icon edit and select IN Digital input M3-80B.

In the Function tab, select ADD connections, make the connection by pulling the wire from the switch icon on the icon and select Central Unit Energy.



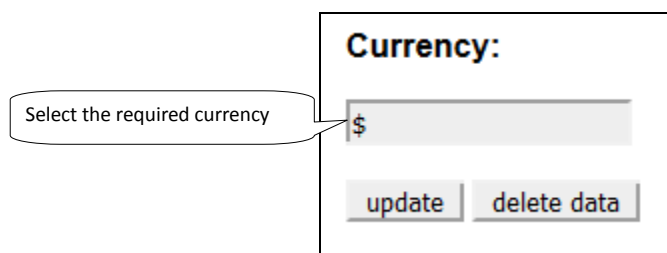
In the tab, Function select Wire Manager, select the input (IN) Energy through button the Edit function to adjust to Action: Short down User function: Energy Increment.



Add the created counter to iMMCC Energy management

## c) Currency

Currency setting option. There is also the option to erase all measured data via the **delete data** button at the bottom of the page.





## • Bookmark Weather

In the Weather tab, you can create scenes or set the data to be copied to the central unit according to the weather station data.

### Giom meteostation

You can choose whether the scene is called once or periodically (**Triggered**), and whether you want to check if exceeds or falls below the value (**Check value**).

Depending on the values set on the web interface, the scene is performed when the value is greater than or less than the scene setting value

**Giom meteostation**

Perform the scene once or periodically

Check values exceeding / falling below

The selected command is executed when the value is exceeded

The selected command is executed when the value falls below

It is used to write measured values to CU (wind speed, temperature, humidity)

Restart to activate save

Save settings

Low wind speed

High wind speed

Low temperature

High temperature

Low relative humidity

High relative humidity

Low wind speed: 2 m/s Triggered: Once Check value: Both Edit: [Value is above](#) [Value is below](#)

High wind speed: 5 m/s Triggered: Once Check value: Both Edit: [Value is above](#) [Value is below](#)

Low temperature: 20 °C Triggered: Once Check value: Both Edit: [Value is above](#) [Value is below](#)

High temperature: 25 °C Triggered: Once Check value: Both Edit: [Value is above](#) [Value is below](#)

Low relative humidity: 40 % Triggered: Periodic Check value: Below Edit: [Value is above](#) [Value is below](#)

High relative humidity: 60 % Triggered: Periodic Check value: Above Edit: [Value is above](#) [Value is below](#)

Save wind speed to: SYSTEMINTEGER0000

Save temperature to: SYSTEMINTEGER0001

Save relative humidity to: SYSTEMINTEGER0003

Save Restart service

You can edit the scene in the Edit menu. In the selected scene, you can add or remove relay units.

**low\_temp**

Selected relay

State ON =1 OFF=0

SA2\_04M\_Sn\_SW1 1 Add event

Add relay

**Defined events**

SA2\_04M\_Sn\_SW1 1 [Remove](#)

Remove unit

Added switch unit

Connect Giom station as a zone:

IMM connection with the server is defined in IMMControl Center in the "Zones" where it is necessary to state "Is it Giom?" switch from "no" to „yes“.

Settings are made via the web interface. The first time finding of the IP address of the weather station is possible with the software "Mlocator", which can be downloaded from the manufacturer's website.

! For proper function you must first set up Giom as a zone. If you set your password in the GIOM administration, be sure to check Except - status.xml.

Information from weather station can be displayed in the iHC applications or IMM application by pressing the left button on the clock icon at the top right of the application.



## Misol meteostation

Possibility to configure data from the weather station with components from the central unit.

**Misol meteostation**

Save wind direction to: SYSTEMINTEGER0000

Save temperature to: <sup>1</sup> SYSTEMINTEGER0001

Save humidity to: SYSTEMINTEGER0002

Save wind speed to: <sup>1</sup> SYSTEMINTEGER0003

Save gust speed to: <sup>1</sup>

Save rainfall to: SYSTEMINTEGER0004

Save uv to:

Save light to:

Save low battery to:

<sup>1</sup> Values are multiplied by 100.

Save Restart service Restart to activate saving

Connect Misol station as a zone:

IMM connection with the server is defined in IMMControl Center in the "Zones" where it is necessary to state "Is it Misol?" switch from "no" to „yes“.

Enter the IP address of the eLAN-RS-485/232 converter (with the already configured Misol meteostation device) as the IP address of the weather station.

**i** Information from weather station can be displayed in the iHC applications or IMM application by pressing the left button on the clock icon at the top right of the application.

- Bookmark Aseko**

Add Aseko pool technology. It is used for monitoring the values and operation of the device.  
Both older and newer versions of Aseko are supported.

### Add Aseko device:

Name:	Aseko	Facility Name
IP address:	192.168.88.100	ELAN-RS-485 converter IP address (with Aseko device already configured)
Device type:	SYSTEMINTEGER0000	Selection of the system integer from the CU where the value is to be written
Automat:	SYSTEMINTEGER0001	
pH <sup>1</sup>	SYSTEMINTEGER0002	
Cl <sup>1</sup>	SYSTEMINTEGER0003	
Rx <sup>1</sup>		
Temperature: <sup>1</sup>	SYSTEMINTEGER0004	
Desired pH (NEW): <sup>1</sup>		
Desired Cl/Rx (NEW): <sup>1</sup>		
Desired temperature (NEW): <sup>1</sup>		
Desired clarifying agent (NEW): <sup>1</sup>		
Relay states (NEW):		
Error 1 (NEW):		
Error 2 (NEW):		
Error (OLD):		
Surface (OLD): <sup>1</sup>		

<sup>1</sup> Values are multiplied by 100.

Add
Store Aseko devices

Comment:

An asterisk next to the name means that the value is multiplied by 100 (e.g.: if the pH is 700 then the real value is 7).

OLD: value only for older Aseko devices

NEW: value is only for older Aseko devices

For more information on the stored values see. eLAN-RS-485/232 manual.

Aseko devices already added:

Aseko devices:		
Name	IP address	
aseko 1	192.168.88.63	Edit

Possibility to edit or delete devices

- **Bookmark Manual**

In bookmark Download you can download the current version manual in PDF format.

- **Bookmark Default settings**

Bookmark Default settings is used for reset settings to default state.

**Reset all server settings to default** - factory settings (all user settings are deleted).

**Reset all devices dependencies to default** - deletes only user settings and their dependence on other IMM server features.

- **Bookmark Audit**

Bookmark Audit is used to show and download LOG file option events for diagnostic developer purposes.

### Logged events

127.0.0.1:49528	-	[02/Jan/2015 13:50:04]	"HTTP/1.1 GET /style.css" - 200 OK
127.0.0.1:49528	-	[02/Jan/2015 13:50:04]	"HTTP/1.1 GET /favicon.ico" - 200 OK
127.0.0.1:49528	-	[02/Jan/2015 13:50:07]	"HTTP/1.1 GET /favicon.ico" - 200 OK
127.0.0.1:49528	-	[02/Jan/2015 13:50:08]	"HTTP/1.1 GET /manual" - 200 OK
127.0.0.1:49528	-	[02/Jan/2015 13:50:08]	"HTTP/1.1 GET /style.css" - 200 OK
127.0.0.1:49528	-	[02/Jan/2015 13:50:08]	"HTTP/1.1 GET /favicon.ico" - 200 OK
127.0.0.1:49528	-	[02/Jan/2015 13:50:09]	"HTTP/1.1 GET /favicon.ico" - 200 OK
127.0.0.1:49528	-	[02/Jan/2015 13:50:10]	"HTTP/1.1 GET /dsettings" - 200 OK
127.0.0.1:49528	-	[02/Jan/2015 13:50:10]	"HTTP/1.1 GET /style.css" - 200 OK
127.0.0.1:49528	-	[02/Jan/2015 13:50:10]	"HTTP/1.1 GET /favicon.ico" - 200 OK

Download logs

Download log file

Actual log list

- **Bookmark Logout**

Logout from the web interface.

## 3. Connection Server update server

To update Connection Server firmware, log into web interface (IP\_ADDRESS\_CONNECTION\_SERVER:8080) and move to tab System. Locate part called Update Server and click on button *Update*. It will be forwarded to update server page where user has to fill login credentials again (default one: imm / imm123).

### Update form file

Update file can be downloaded from following webpage: <https://www.elkoep.com/connection-server-inels>

Choose file from local disk to be uploaded to Connection Server. Clicking on button *Upload* will transfer to Connection Server.

### Update from update server

Clicking on button *Download* will download package from public server.

### File info

Line **Installation file** will show name of uploaded package in case of successful file upload.

Clicking on button *Start update* will initiate update procedure.

Each run of update procedure will create a backup of original version to be able to revert changes in case of any unexpected error. Backup restore procedure can be initiated by clicking on button *Restore backup*.

### Status

This part shows update progress.

Clicking on button *Download log* shows update progress.

Message *Ready for update* will be shown after update procedure finishes.

### NOTE:

If update process led also to update server change, then green message with *Restart* button shows up. Click on this button in order to finish update procedure of update server.

## 4. Appendix

### Control 4

Link Control 4 with iNELS wiring using the Connection Server

Requirements for linking Control 4: iNELS3 central unit

- Controller HC-250, HC-350, HC-800, EA-3
- Composer software (2.7.2, 2.8.1, 2.8.2 and higher)
- iMM Server or Connection Server 3.219 or higher

Setting up in the licensed Composer program first step is to store iNELS drivers:

- |                          |  |
|--------------------------|--|
| iNELS3_Master_Driver.c4i | - The main link driver between and Connection Server to C4   |
| iNELS3_Switch.c4i        | - Switching units SA3  |
| iNELS3_Dimmer.c4i        | - Dimmers DA3, DAC3  |
| iNELS3_PIR.c4i           | - PIR sensing disturbance monitoring on IM3 input            |
| iNELS3_RGB.c4i           | - RGB control using RFDA-73M / RGB                           |
| iNELS3_Therm.c4i         | - Temperature sensor   |
| iNELS3_Thermostat.c4i    | - Thermostat built in iDM (heating, cooling)                 |
| iNELS3_Blinds.c4i        | - Unauthorized driver in preparation for JA3 / 20B / DC, SA3 |

Copy these files to C: \ Users \ user \ Documents \ Control4 \ Drivers and run Composer for.

We will connect to the IP address of the C4 (Director), and then insert it into the project

iNELS3\_Master\_Driver, to which we set the IP address of the Connection Server.

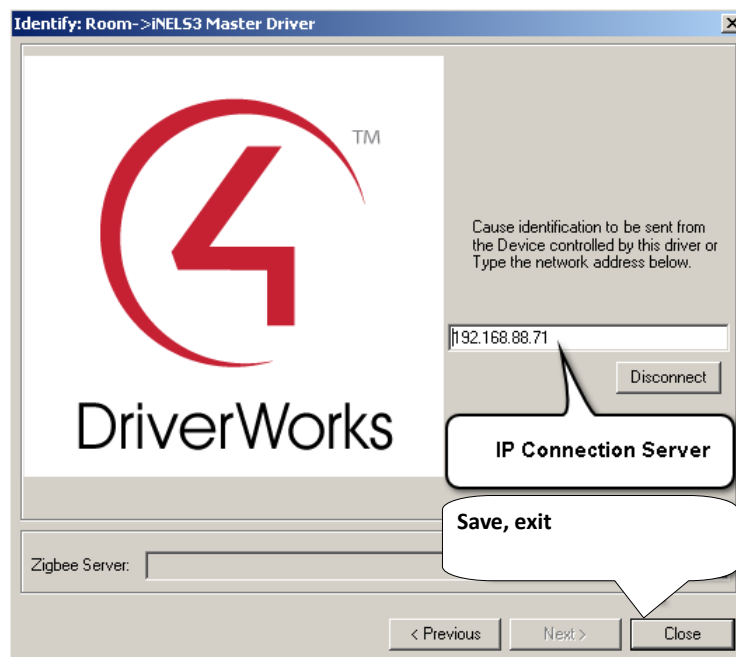
Adding the iNELS3 Driver to the project

Procedure: Switch to the System design menu and continue to the Items window where you search for "iNELS" on the Search tab and then double-click the selected driver into the project.

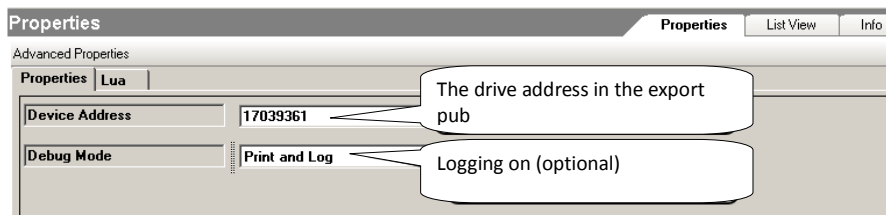
**! First add the iNELS3 Master Driver before inserting the other iNELS3 drivers**

Inserting an IP address into the Master Driver

Procedure: Go to the Connections menu where you select iNELS3 Master Driver and continue to the Network tab to open the iNELS 3 Master Driver and enter the IP address.



Example of inserting the dimmer into the iNELS3\_Dimmer controller



First, select the drive from the listing in iMMCC on the Configuration tab afterwards

DA3-22M\_OUT1\_000021 Y B 17039361 REAL PUB\_INOUT

We will add iNELS3\_Dimmer to the name and insert the address of the Device Address: 17039361.

Debug mode is an optional parameter, if we set Print and Log, we can validate it in the Lua Status tab.

! After completing the settings in Composer, restart the C4 directory.

- Note: The thermostat can modify the modes (attenuation, minimum, normal, comfort) based only on the next time stamp. The direct temperature setting function in the application is not yet supported.