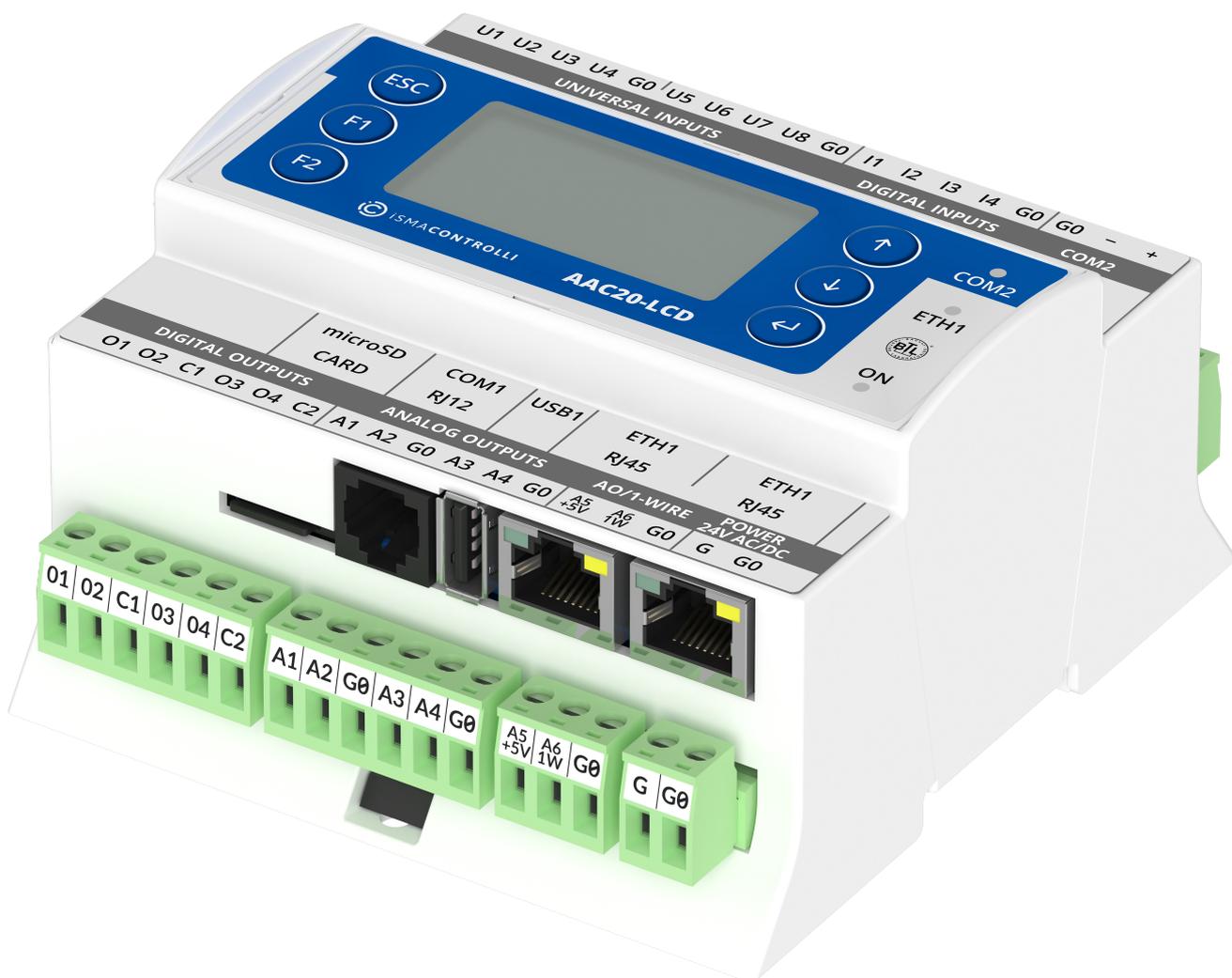


iSMA-B-AAC20

User Manual

Visualization Web Server



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1 Introduction

This user manual contains information about the visualization web server for the iSMA-B-AAC20 controllers.

The visualization web server allows to present basic information about an application controlled by the iSMA-B-AAC20 controllers. The web server is based on .html files and works together with an existing built-in web server administrator platform. Visualizations can be customized and must be loaded separately.

The visualization web server is composed of a main page and up to four subpages intended for time schedules control.

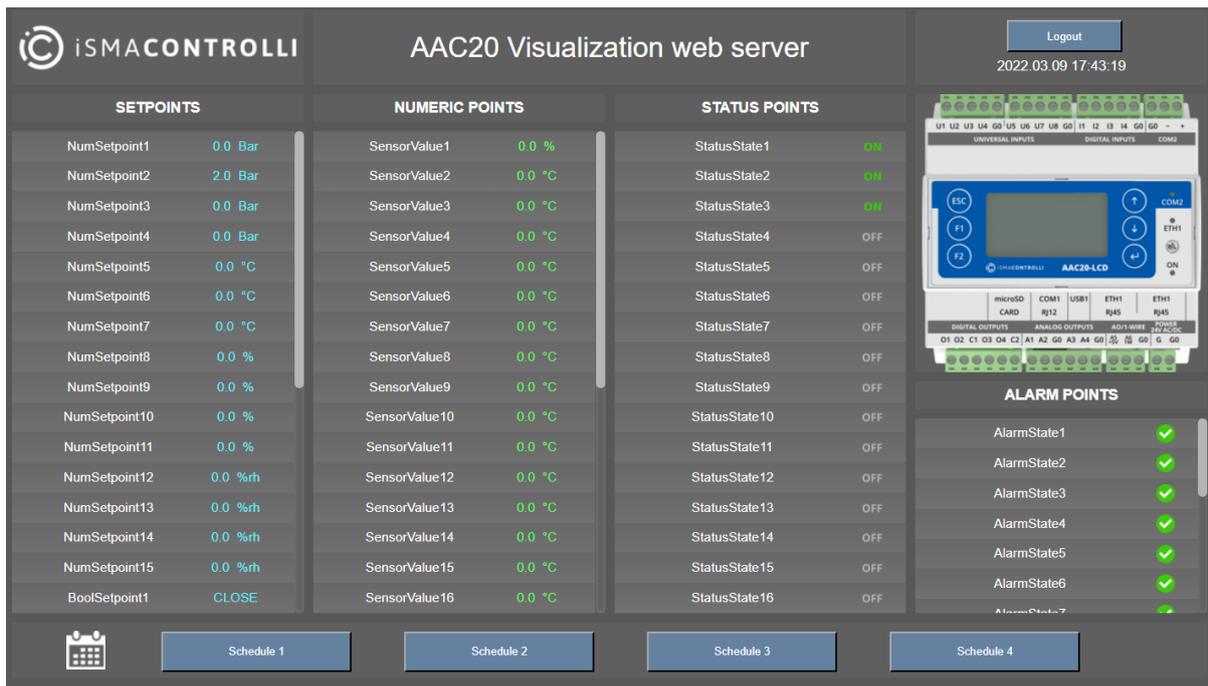


Figure 1. Main page of the visualization web server

1.1 Revision History

Rev.	Date	Description
1.0	28 Feb 2022	First edition

Table 1. Revision history

2 Overview

On the default main page there are 4 containers, which can be fully adjusted with the Visualization_configurator.xlsm file:

- setpoints;
- numeric points;
- status points;
- alarm points.

There are also 4 buttons opening additional subpages, responsible for schedules, which types (numeric or Boolean) can also be configured using the iSMA Tool software.

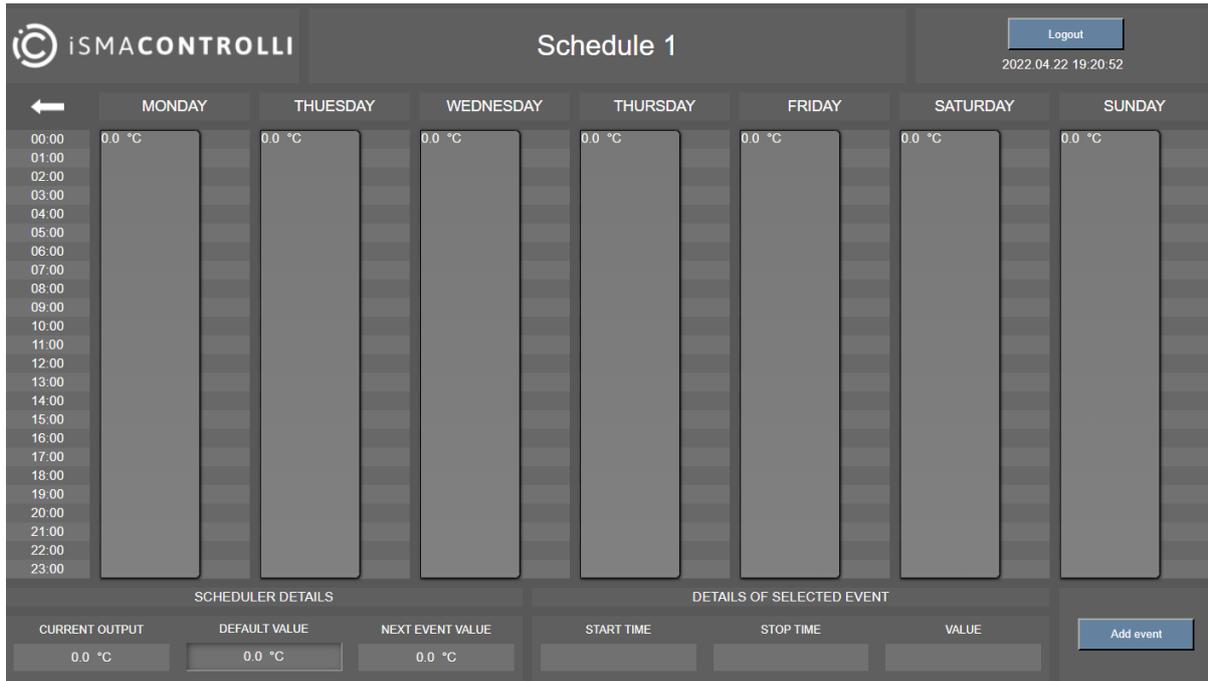


Figure 2. Schedule view of visualization

3 Communication Protocol

The visualization web server uses the Modbus TCP communication with the iSMA-B-AAC20 controller and html5 to be displayed on PC, Android panel, or with Niagara Framework.

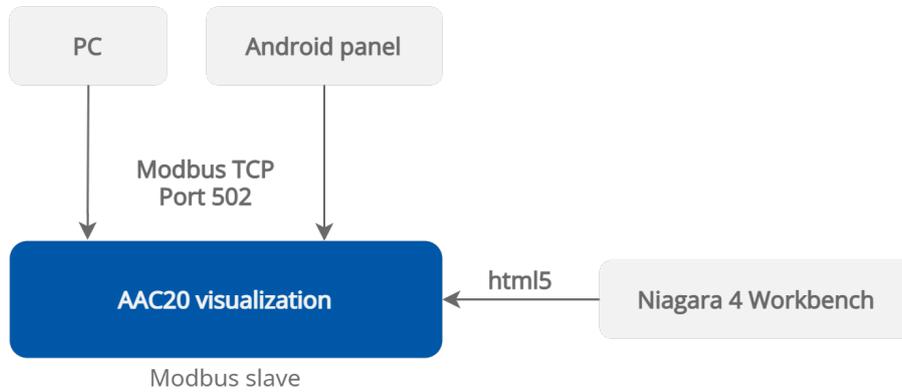


Figure 3. Visualization web server display methods

Warning!

The web server uses a TCP/IP socket to communicate with the controller. The iSMA-B-AAC20 controller has 16 sockets for Modbus network. 3 out of 16 sockets are permanently occupied for:

- Modbus server;
- SOX;
- web server.

Consequently, there are 13 sockets left to use in the device, for example, the Modbus TCP network can communicate with 13 devices with different IP addresses and connect them to application (adding more devices automatically forces them into the fault status). Also, adding any of the iSMA Weather or iSMA MailService kits occupies 1 socket per each kit (which becomes apparent after adding the kit and its components, saving the application, and rebooting the controller). The iSMA MailService kit can occupy more sockets if the mail service is configured for one account on one host—each next host occupies next sockets.

4 Software Bundle

To use the visualization web server, it is necessary to download the Software Bundle 6.1. for the iSMA-B-AAC20 controller from the iSMA CONTROLLI [website](#).

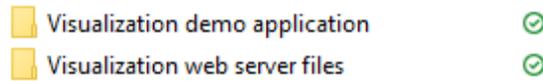


Figure 4. Visualization.zip package folders

The Visualization.zip package contains the following folders:

- Visualization demo application;
- Visualization web server files.

The visualization web server requires also specific kits from the iC_kits.zip package.

4.1 Kits

To run the visualization web server, the following kits need to be installed on the controller using the Kit Manager:

- iSMA_ModbusTcpSlaveNetwork;
- iSMA_VisualizationWebServer.

Name	Firmware	IP Address	Type	Commands
<input checked="" type="checkbox"/> Biurko	6.0	192.168.1.43	AAC20	Disconnect

On Device	Name	Latest Local	Installed	Action
<input checked="" type="checkbox"/>	datetime	1.2.28.105	1.2.28.105	1.2.28.105
	Kit cannot be uninstalled because its components are used in the application			
<input checked="" type="checkbox"/>	inet	1.2.28.102	1.2.28.102	1.2.28.102
<input checked="" type="checkbox"/>	iSMA_control	1.2.28.111	1.2.28.111	1.2.28.111
	Kit cannot be uninstalled because its components are used in the application			
<input checked="" type="checkbox"/>	iSMA_controlApi	1.2.28.114	1.2.28.114	1.2.28.114
	Kit cannot be uninstalled because its components are used in the application			
<input checked="" type="checkbox"/>	iSMA_ModbusTcpSlaveNetwork	1.2.28.104	1.2.28.104	1.2.28.104
	Kit cannot be uninstalled because its components are used in the application			
<input checked="" type="checkbox"/>	iSMA_NativeLibs	1.2.28.101	1.2.28.101	1.2.28.101
<input checked="" type="checkbox"/>	iSMA_platAAC20	1.2.28.110	1.2.28.110	1.2.28.110
	Kit cannot be uninstalled because its components are used in the application			
<input checked="" type="checkbox"/>	iSMA_webScheduleWidget	1.2.28.0.29	1.2.28.0.29	1.2.28.0.29
	Kit cannot be uninstalled because its components are used in the application			
<input checked="" type="checkbox"/>	sox	1.2.28.103	1.2.28.103	1.2.28.103
	Kit cannot be uninstalled because its components are used in the application			
<input checked="" type="checkbox"/>	sys	1.2.28.108	1.2.28.108	1.2.28.108
	Kit cannot be uninstalled because its components are used in the application			
<input type="checkbox"/>	basicSchedule	1.2.28		

Figure 5. The Kit Manager view of installed kits

4.2 Visualization Web Server Files

The Visualization web server package contains files for configuration of the web server functionalities and looks.

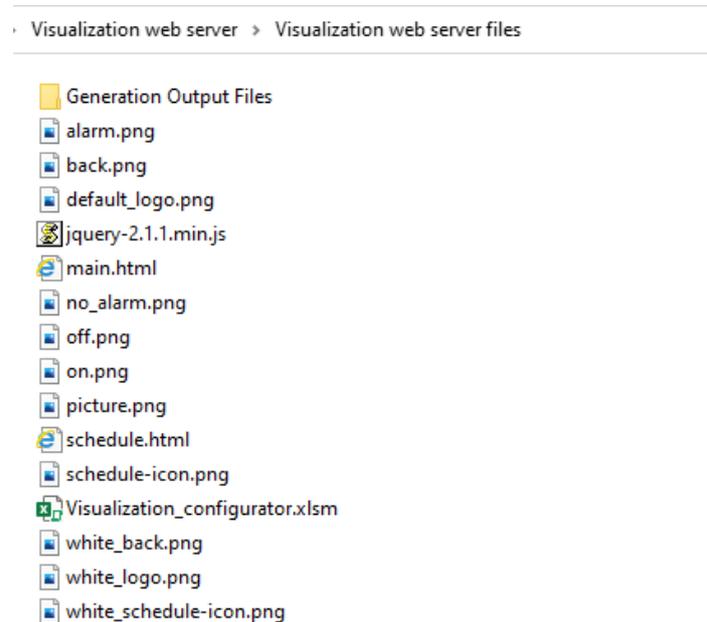


Figure 6. Visualization web server files

- Generation Output Files folder: created upon using the Generate XML File button in the Visualization_configurator.xls file; contains all files necessary for the configured web server to operate properly;
- .png files: image files including icons and picture for specific functions; among them:
 - logo: a file defining a default logo displayed in the web server;
 - picture: a file defining a default image displayed on the web server's main page; by default, the iSMA-B-AAC20 image is displayed;

Note: Dimensions of a picture window are 300 px x 300 px, and it is recommended to use pictures of this resolution. Pictures with higher resolution will be scaled automatically, however, it may extend page loading time. Maximum recommended image size is 500 kB.

- main.html: a file responsible for a main view of the visualization template in the web server;

Note: Please do not change the name of this file for a first configuration of the visualization. Changing the name of the main.html for the first configuration may cause error no. 404 "Page not found". However, it is recommended to change the name of this file for next configurations.

- schedule.html: a file responsible for schedules configuration;
- Visualization_configurator.xls: a main configuration file for the web server.

The Visualization web server folder contains files necessary to install on the SD card and flash memory of the iSMA-B-AAC20 controller:

- files to be installed on the flash memory of AAC20;
- files to be installed on the SD card.

4.2.1 Installation on the Flash Memory

There is one file, which needs to be installed directly in the iSMA-B-AAC20's flash memory. To upload the file, run the AAC20 Updater software and configure the connection appropriately. Then, upload the following file with the AAC20 Updater:

- Index.html: activates .html files on the SD card.

Note: Cleaning of the flash memory from the uploaded files is carried out by erasing all components in the controller, which means that also the kits and applications are erased during this process (it is done with the Erase Flash Memory option in the context menu after right-clicking the Send File button).

4.2.2 Installation on the SD Card

Files to be copied on to the SD card are located in the Generation Output Files folder. These files are generated upon using the Generate XML File button in the Visualization_configurator.xls file.

To install files on the SD card, first, place the SD card in the card reader of a computer. Then, copy all files located in the SD card folder to the actual SD card:

Warning!

While copying files to the SD card, please remember to copy files from inside the Generation Output Files folder, and paste them to the SD card directly, instead of copying the folder with its contents itself. Copying the folder and pasting it to the SD card will cause the visualization web server error. It is also not allowed to group files in folders.

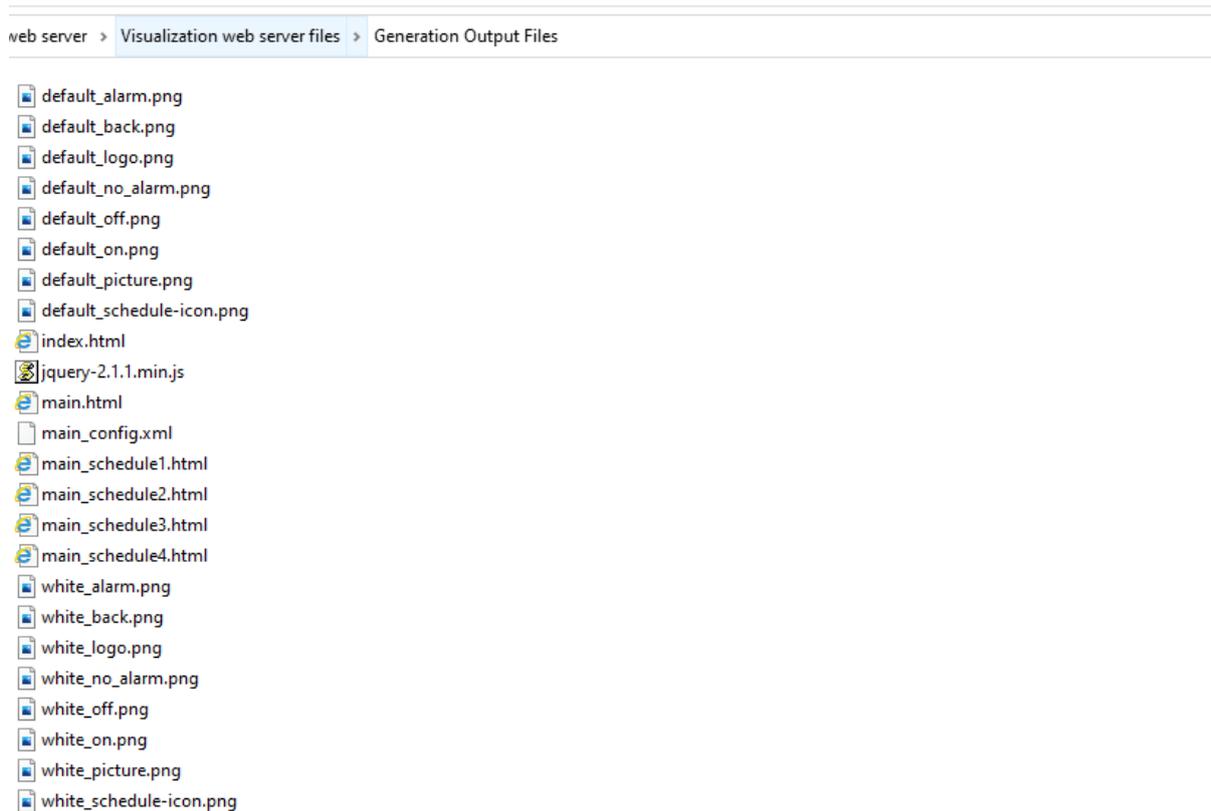


Figure 7. Generation Output Files folder

All files must be copied to the main folder on SD card. It is not allowed to group files in folders. Files for the installation on the SD card are the following:

- .png files: default image files generated based on the files in the Visualization web server main folder;
- index.html;
- jquery: engine file;
- main.html: a file responsible for a main view of the visualization template in the web server;
- main_config.xml: a file containing the web server configuration;
- main_schedule1-4.html: files responsible for the schedules views in the web server.

Next, disconnect the card from the computer using the secure disconnect device function. Place the SD card in the iSMA-B-AAC20 while the controller is powered off.

Note: It is important to remember that disconnecting the iSMA-B-AAC20 from the power supply does not mean that the unit is already completely powered off. It is necessary to wait about 5 to 15 seconds after all the signal diodes of the controller turn off. Only then the SD card can be safely placed in the controller. The same rule applies when taking the SD card out of the controller.

4.3 Visualization Demo Application

The Visualization demo application folder contains files required for a demo configuration of the web server:

Visualization web server > Visualization demo application				
Name		Date modified	Type	Size
 app.sab		04.05.2022 09:30	SAB File	7 KB
 app.sax		04.05.2022 09:30	SAX File	44 KB
 kits.scode		04.05.2022 09:30	SCODE File	132 KB

Figure 8. Visualization demo application folder

In order to use the visualization web server, it is required to install a default application, app.sax, which includes pre-defined folders and components responsible for displaying values on the main page:

- ModbusTcpSlaveNetwork

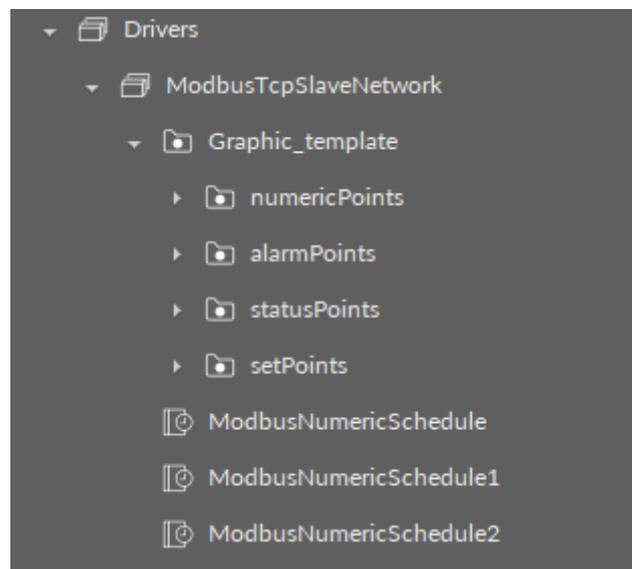


Figure 9. ModbusTcpSlaveNetwork folder contents

Located in the Drivers folder, contains pre-defined, already addressed, components for the Modbus TCP slave network communication. Components represent variables visible on visualization web server page and are responsible for a correct communication.

Additionally components are sorted and grouped into folders responsible for each editable container on the web page, similar as organized in Visualization_Configurator.xlsx sheets.

Four components dedicated for schedules control come from the isma_Visualization_webserver kit.

- Logic

The Logic folder contains four components (from the isma_Control_Api kit), which are responsible for schedules in the iSMA-B-AAC20 application. They are already linked with components in the Driver folder.

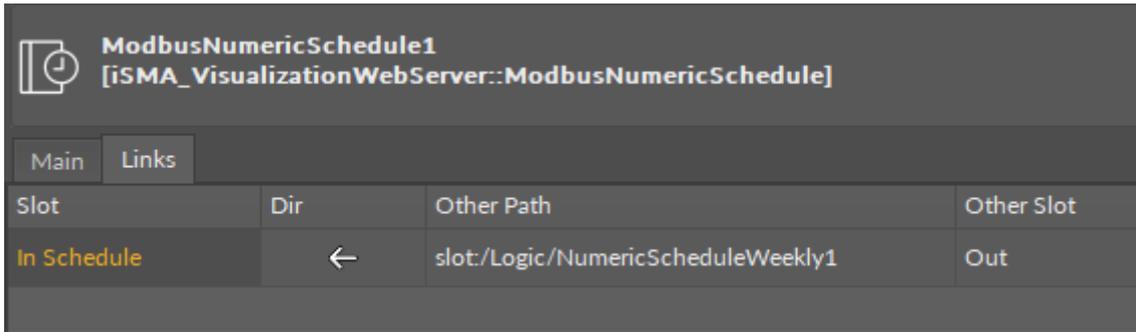


Figure 10. Links between Schedule controller (Logic -Driver)

The quickest way to use the visualization web server on an existing application on iSMA-B-AAC20 devices is installing "the Visualization_WebServer_Demo_App.sax file", on the simulator (127.0.0.1:1876) and copying the Graphic_template folder from Drivers and "Visualization_webserver_logic" folder from the Logic folder "Graphic_template" on the used device.

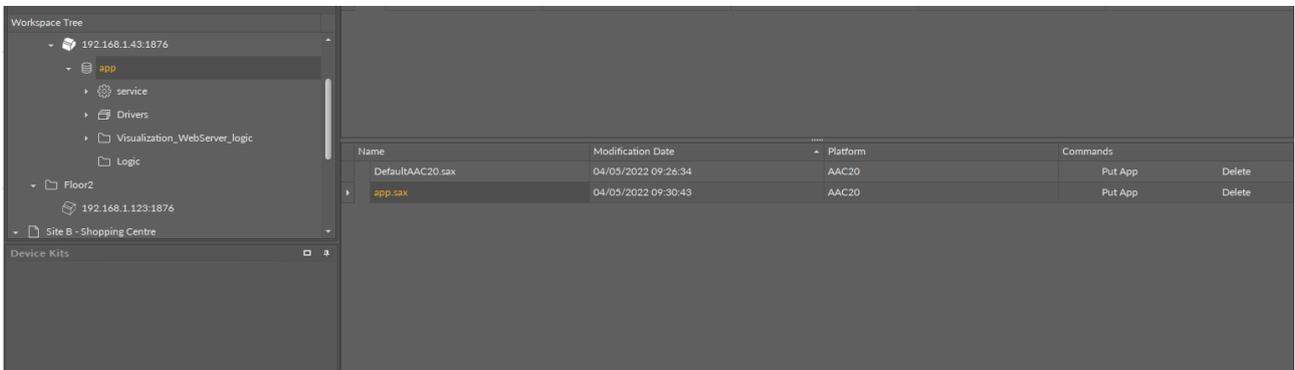


Figure 11. Installing Default the default application on simulator

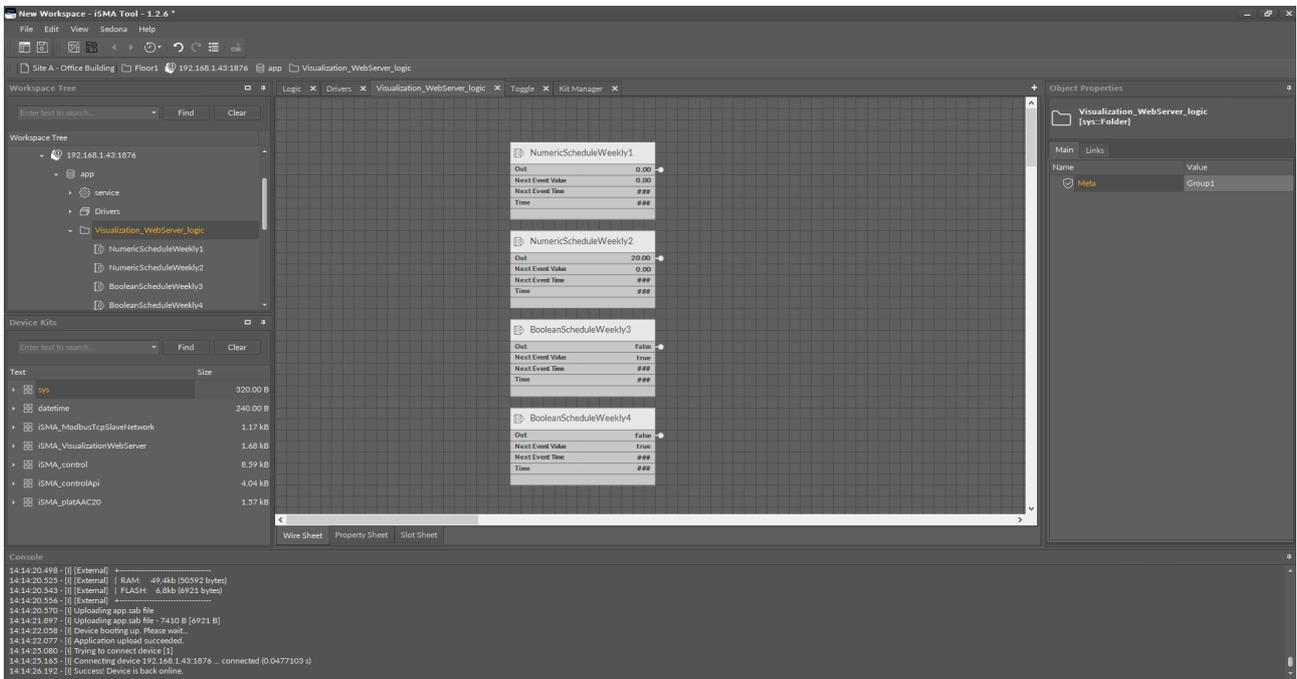


Figure 12. View of the folder, which is needs to be copied to the iSMA-B-AAC20 device.

Warning!

Copying a folder between 2 different devices is allowed from the iSMA Tool 1.2.6. Please note that the same versions of kits are required on both devices.

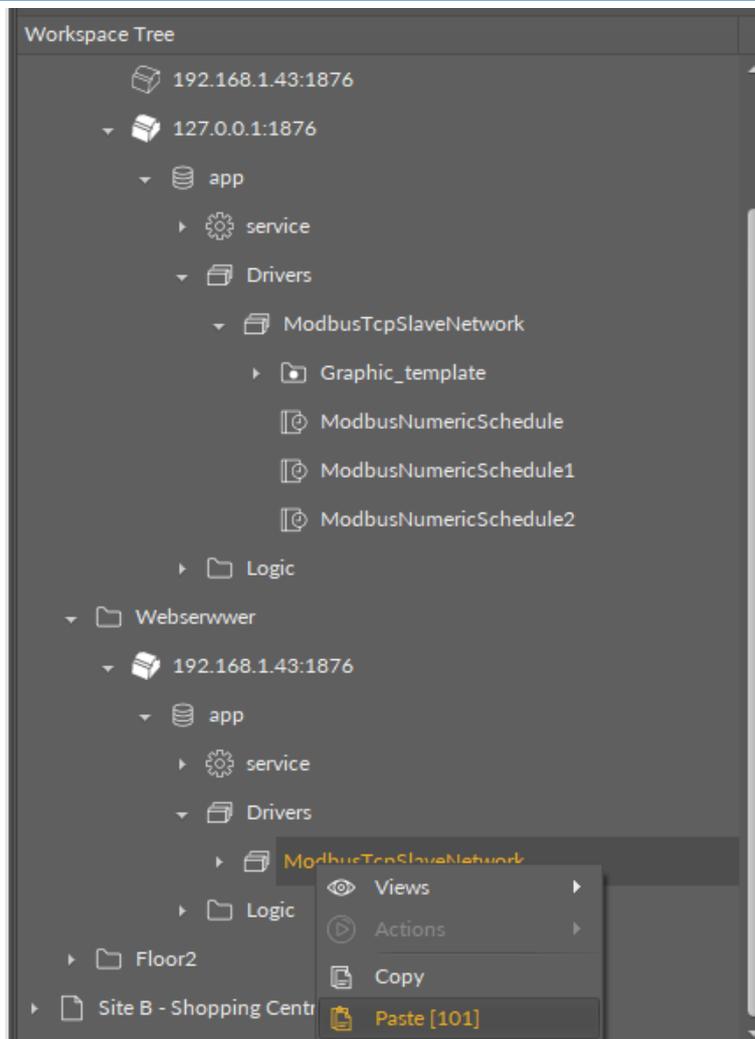


Figure 13. Copy/paste a folder "ModbusTcpSlabeNetowrk" between controllers

Warning!

Only Schedules components are already linked by default in the visualization application and will work correctly just after copying them. All components from "the ModbusTcpSlaveNetwork" in the Driver folder must be linked to the existing application according to customer's requirements.

5 Configuration File

The Configuration folder contains the Visualization_configurator.xlsm file, which is dedicated to configure the main view of the visualization. This file allows to customize prepared .html file and generate new .xml file to be sent to the SD card.

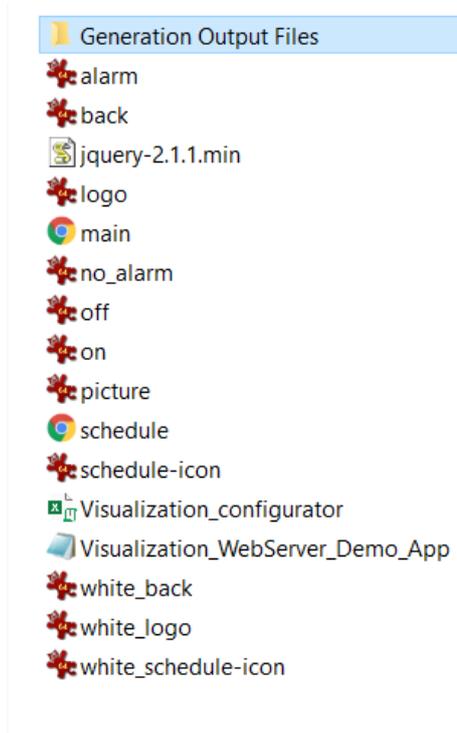


Figure 14. Configuration folder

Warning!

Please remember to save the web server configuration files locally, not in a network location (e.g., OneDrive, Sharepoint, Google Drive, etc.); the web server will not operate if saved in a network location.

The Visualization_configurator.xls file is a main file for configuration of the visualization web server. It is constructed with separate tabs, which contain tables prepared to configure different functionalities of the visualization web server. Each tab includes a legend table, which explains functions of colored cells in tables:

20								
21								
22								
23		LEGEND						
24		OF CELLS WITH BORDER						
25		Color	Description					
26		white	editable cells with proper value					
27		grey	not editable cells - changing these values will cause the generator to work incorrectly					
28		red	editable cells with not proper value - correction required before turning on the generator					
29								
30								
31								
32								
33								
34								

general
network
numericPoints
alarmPoints
setPoints
statusPoints
schedulers
lexicons
themes

Figure 15. Cells legend in the Visualization_configurator file

Also, each cell in tables has a Tip or Attention note assigned. These notes contain indications on a purpose of each field or restrictions of the fields edition.

1	AB	C	D	E	1	AB	C	D	1	AB	C	D
2					2	count		16	2	count		4
3					3				3			
4		readPolicy			4	alarmPoint			4	button		
5		name	poll		5	label	bitNumber		5	label	fileName	webTitle
6		fast	1000	ms	6	AlarmState1	0		6	Schedule 1	schedule1	iSMA-B-AAC
7		normal	2000	ms	7	AlarmSta			7	Schedule 2	schedule2	iSMA-B-AAC
8		slow	50		8	AlarmSta			8	Schedule 3	schedu	AC
9					9	AlarmSta			9	Schedule 4	schedu	AC
10					10	AlarmSta			10			
11					11	AlarmSta			11			
12					12	AlarmSta			12			
13					13	AlarmState8	7		13			

Tip

Enter polling time [ms] for polling type name is put in the same row. Polling time cannot be lower than 200 [ms].

Tip

Enter a label for the alarm point to be displayed on the graphic. Value cannot be empty.

Attention

Edition of this cell will cause the generator to work incorrectly!

Figure 16. Tips and Attention notes

5.1 Excel Sheets Description

Each of the configuration excel sheets is responsible for each editable container on the web page.

- General
- Network
- numericPoints
- alarmPoints
- setPoints
- statusPoints
- Schedulers
- Lexicons
- Themes

5.1.1 General

A general sheet defines all main information about the visualization page. Most importantly, it contains the Generate XML file button, which generates an .xml configuration file to be uploaded on the SD card. Using this option creates a Generation Output Files folder, which includes all files that have to be copied onto the SD card.

Warning!

In order to use the Generate XML File option, please remember to enable macros in the Excel application.

Warning!

While copying files to the SD card, please remember to copy files from inside the Generation Output Files folder, and paste them to the SD card directly, instead of copying the folder with its contents itself. Copying the folder and pasting it to the SD card will cause the visualization web server error. It is also not allowed to group files in folders.

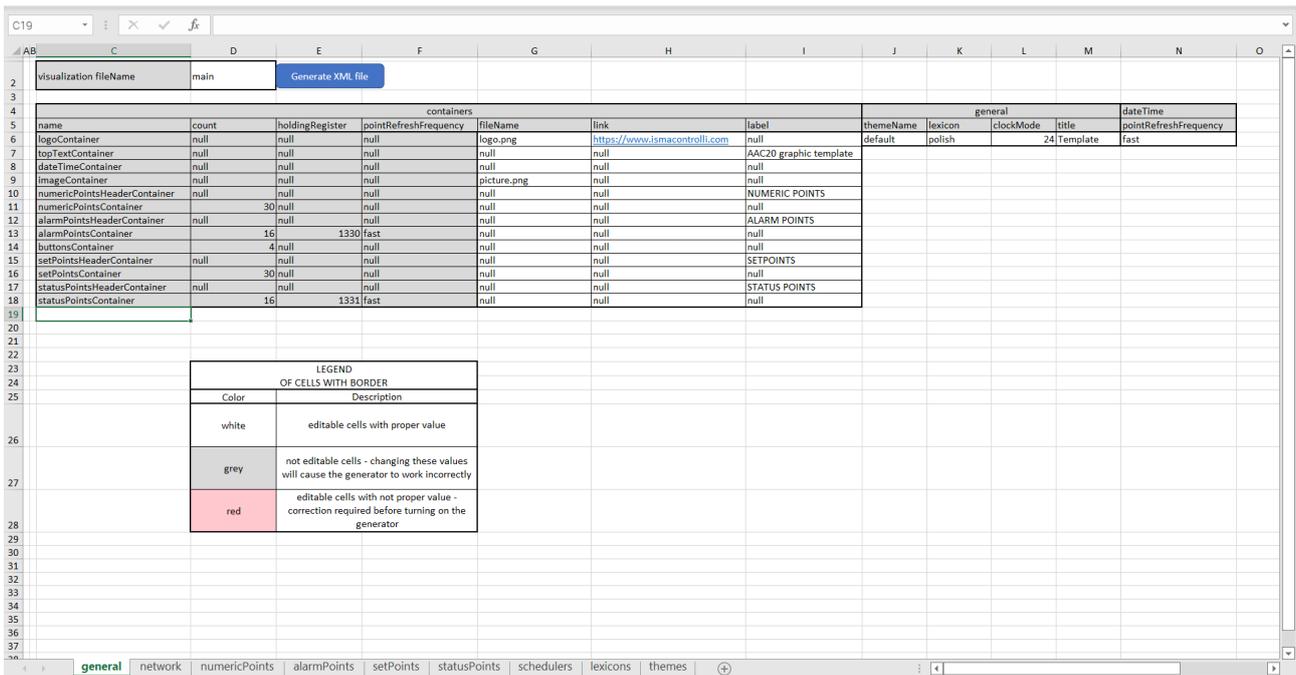


Figure 17. A general sheet

The general sheet contains the following parameters to edit:

- fileName: identifies image files for logo and image containers (these files have to be located in the Generate Output Files folder);
- link: allows to link a logo container image to a specific web location;
- label: specifies header of container column's (top text container, numeric points header container, alarm points header container, setpoints header container, and status points header container)

Note: Please note that the above functionalities cannot be defined for fields where the null value is inserted. If such field is to be edited, the attention note is displayed:

containers								
	name	count	holdingRegister	pointRefreshFrequency	fileName	link	label	themeName
6	logoContainer	null	null	null	logo.png	https://www.ismacontrolli.com	null	default
7	topTextContainer	null	null	null	null	null	AAC20 graphic template	
8	dateTimeContainer	null	null	null	null		null	
9	imageContainer	null	null	null	picture.png		null	
10	numericPointsHeaderContainer	null	null	null	null		NUMERIC POINTS	
11	numericPointsContainer	30	null	null	null		null	
12	alarmPointsHeaderContainer	null	null	null	null		ALARM POINTS	
13	alarmPointsContainer	16	1330	fast	null		null	
14	buttonsContainer	4	null	null	null		null	
15	setPointsHeaderContainer	null	null	null	null		SETPOINTS	
16	setPointsContainer	30	null	null	null		null	
17	statusPointsHeaderContainer	null	null	null	null		STATUS POINTS	
18	statusPointsContainer	16	1331	fast	null		null	

Figure 18. Attention note

In further columns, the following parameters can be configured:

- themeName: defines a theme used for the web server (themes are configured in the themes tab);
- lexicon: defines a language version used for the web server (translations are configured in the lexicons tab);
- clockMode: defines a clock mode used for the web server;
- title: defines a title displayed as a web page name on a browser's tab;
- pointRefreshFrequency: sets a frequency of refreshing points values (frequencies are configured in the network tab).

5.1.2 Network

A network sheet defines values for read polling frequencies for each component visible on the visualization page;

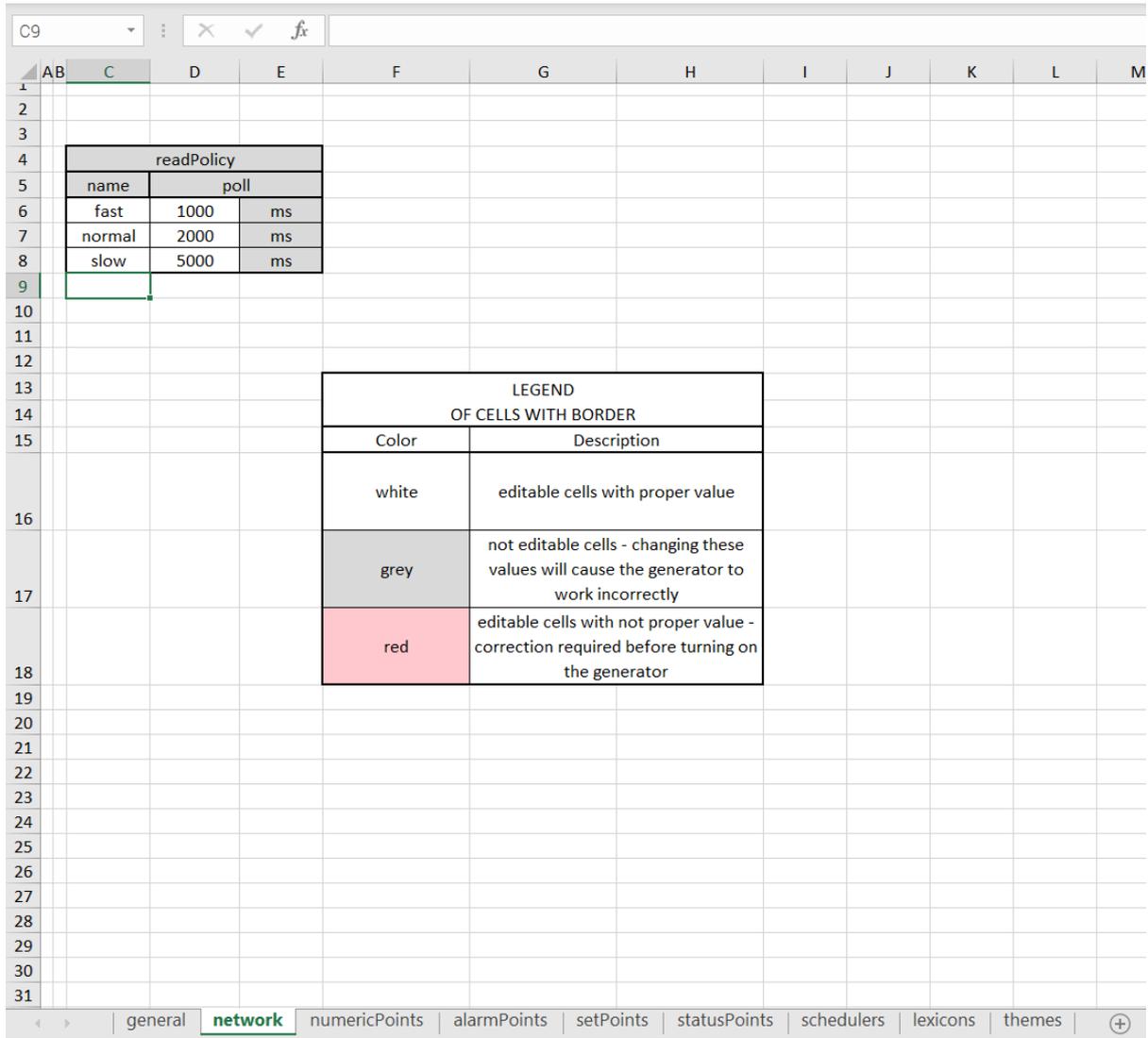


Figure 19. A network sheet

The default polling values are the following:

- fast: 1000 ms;
- normal: 2000 ms;
- slow: 5000 ms.

The frequency, which is used to read values for points displayed in the visualization page, is determined in the general tab.

Note: It is not recommended to set the polling frequency faster than 1000 ms.

5.1.3 numericPoints

A numericPoints sheet lists all numeric points displayed on the visualization page.

	numericPoint	label	value
holdingRegister	pointRefreshFrequency	text	unit scale
count		30	
1300	normal	SensorValue1	% 1
1301	normal	SensorValue2	°C 0,1
1302	normal	SensorValue3	°C 0,1
1303	normal	SensorValue4	°C 0,1
1304	normal	SensorValue5	°C 0,1
1305	normal	SensorValue6	°C 0,1
1306	normal	SensorValue7	°C 0,1
1307	normal	SensorValue8	°C 0,1
1308	normal	SensorValue9	°C 0,1
1309	normal	SensorValue10	°C 0,1
1310	normal	SensorValue11	°C 0,1
1311	normal	SensorValue12	°C 0,1
1312	normal	SensorValue13	°C 0,1
1313	normal	SensorValue14	°C 0,1
1314	normal	SensorValue15	°C 0,1
1315	normal	SensorValue16	°C 0,1
1316	normal	SensorValue17	% 1
1317	normal	SensorValue18	% 1
1318	normal	SensorValue19	% 1
1319	normal	SensorValue20	% 1
1320	normal	SensorValue21	% 1
1321	normal	SensorValue22	% 1
1322	normal	SensorValue23	% 1
1323	normal	SensorValue24	% 1
1324	normal	SensorValue25	% 1
1325	normal	SensorValue26	% 1
1326	normal	SensorValue27	% 1
1327	normal	SensorValue28	% 1
1328	normal	SensorValue29	% 1
1329	normal	SensorValue30	% 1

Figure 20. A numericPoints sheet

The maximum number of numeric points is set to 30. To set the number of visible numeric points, it is required to fill in the "count" cell. For each point, it is possible to set the following parameters:

- Modbus holding register: defines the address of the Modbus holding register for the numeric point;

Note: It is not recommended to change the default addresses of holding registers due to their links to components in the Visualization_Webserver_Demo_App.sax file. Each change of addresses in the .xism file must be synchronized with the application in the iSMA Tool.

- pointRefreshFrequency: choosing polling frequency selected from pre-defined values (fast, normal, slow);
- label: text visible displayed on the main visualization page;
- unit: unit visible displayed on the main visualization page;
- scale: scale of the Modbus holding register for correct reading via Modbus protocol.

5.1.4 alarmPoints

An alarmPoints sheet lists the alarm points displayed on the visualization page.

alarmPoint	
label	bitNumber
AlarmState1	0
AlarmState2	1
AlarmState3	2
AlarmState4	3
AlarmState5	4
AlarmState6	5
AlarmState7	6
AlarmState8	7
AlarmState9	8
AlarmState10	9
AlarmState11	10
AlarmState12	11
AlarmState13	12
AlarmState14	13
AlarmState15	14
AlarmState16	15

LEGEND OF CELLS WITH BORDER	
Color	Description
white	editable cells with proper value
grey	not editable cells - changing these values will cause the generator to work incorrectly
red	editable cells with not proper value - correction required before turning on the generator

Figure 21. An alarmPoints sheet

The maximum number of alarm points is set to 16. To set the number of visible displayed number alarm points, fill the "count" cell. All alarm points use 1 holding register. Polling frequency can be set for reading points (fast, normal, slow).

For each point, it is possible to set the following parameters:

- label: text visible displayed on the main visualization page;
- bitNumber: defines a bit of a holding register responsible for each variable in a component.

5.1.5 setPoints

A setPoints sheet lists all setpoints displayed on the visualization page.

	setPoint		label		value				
	setpointType	holdingRegister	pointRefreshFrequency	bitNumber	text	unit	scale	falseText	trueText
6	numericSetPoint	1332	normal	null	NumSetpoint1	Bar	1	null	null
7	numericSetPoint	1333	normal	null	NumSetpoint2	Bar	1	null	null
8	numericSetPoint	1334	normal	null	NumSetpoint3	Bar	1	null	null
9	numericSetPoint	1335	normal	null	NumSetpoint4	Bar	1	null	null
10	numericSetPoint	1336	normal	null	NumSetpoint5	°C	0,1	null	null
11	numericSetPoint	1337	normal	null	NumSetpoint6	°C	0,1	null	null
12	numericSetPoint	1338	normal	null	NumSetpoint7	°C	0,1	null	null
13	numericSetPoint	1339	normal	null	NumSetpoint8	%	1	null	null
14	numericSetPoint	1340	normal	null	NumSetpoint9	%	1	null	null
15	numericSetPoint	1341	normal	null	NumSetpoint10	%	1	null	null
16	numericSetPoint	1342	normal	null	NumSetpoint11	%	1	null	null
17	numericSetPoint	1343	normal	null	NumSetpoint12	%rh	1	null	null
18	numericSetPoint	1344	normal	null	NumSetpoint13	%rh	1	null	null
19	numericSetPoint	1345	normal	null	NumSetpoint14	%rh	1	null	null
20	numericSetPoint	1346	normal	null	NumSetpoint15	%rh	1	null	null
21	booleanSetPoint	1347	fast	0	BoolSetpoint1	null	null	CLOSE	OPEN
22	booleanSetPoint	1347	fast	1	BoolSetpoint2	null	null	STOP	START
23	booleanSetPoint	1347	fast	2	BoolSetpoint3	null	null	STOP	START
24	booleanSetPoint	1347	fast	3	BoolSetpoint4	null	null	STOP	START
25	booleanSetPoint	1347	fast	4	BoolSetpoint5	null	null	STOP	START
26	booleanSetPoint	1347	fast	5	BoolSetpoint6	null	null	STOP	START
27	booleanSetPoint	1347	fast	6	BoolSetpoint7	null	null	STOP	START
28	booleanSetPoint	1347	fast	7	BoolSetpoint8	null	null	STOP	START
29	booleanSetPoint	1348	fast	0	BoolSetpoint9	null	null	Off	On
30	booleanSetPoint	1348	fast	1	BoolSetpoint10	null	null	Off	On
31	booleanSetPoint	1348	fast	2	BoolSetpoint11	null	null	Off	On
32	booleanSetPoint	1348	fast	3	BoolSetpoint12	null	null	Off	On
33	booleanSetPoint	1348	fast	4	BoolSetpoint13	null	null	Off	On
34	booleanSetPoint	1348	fast	5	BoolSetpoint14	null	null	Off	On
35	booleanSetPoint	1348	fast	6	BoolSetpoint15	null	null	Off	On

Figure 22. A setPoints sheet

The maximum number of all setpoints is 30, no matter what type of variables is used (numeric setpoint or Boolean setpoint). To set the number of displayed setpoints, fill in the "count" cell.

For numeric and Boolean setpoints, it is possible to set the following parameters:

- setpointType: defines a type of component used for setpoints (numeric or Boolean);
- Modbus holdingRegister: defines the address of the Modbus holding register used in the iSMA Tool application;
- pointRefreshFrequency: polling frequency selected from pre-defined values (fast, normal, slow);
- label: text displayed on the main visualization page.

In order to use numeric setpoints, set the additional parameters:

- Unit: unit displayed on the main visualization page;
- Scale: scale of the Modbus holding register for correct reading via Modbus protocol.

For numeric setpoints, the bitNumber, falseText, and trueText cells have to be left with a null value.

In order to use Boolean setpoints, set the additional parameters:

- bitNumber: defines a bit of the holding register responsible for each variable in a component;
- falseText: text displayed for a false (0) value;
- trueText: text displayed for a true (1) value.

Warning!

The maximum number of Boolean setpoints types is set to 16, and the maximum number of numeric setpoints is also set to 16.

5.1.6 statusPoints

A statusPoints sheet lists the status points displayed on the visualization page.

AB	C	D	E	F	G	H	I	J	K
2	count	16		holdingRegister	1331		pointRefreshFrequency	fast	
3									
4	statusPoint								
5	label	bitNumber							
6	StatusState1	0							
7	StatusState2	1							
8	StatusState3	2							
9	StatusState4	3							
10	StatusState5	4							
11	StatusState6	5							
12	StatusState7	6							
13	StatusState8	7							
14	StatusState9	8							
15	StatusState10	9							
16	StatusState11	10							
17	StatusState12	11							
18	StatusState13	12							
19	StatusState14	13							
20	StatusState15	14							
21	StatusState16	15							
22									
23									
24									
25									
26									
27									
28									
29									
30									
31									

LEGEND OF CELLS WITH BORDER	
Color	Description
white	editable cells with proper value
grey	not editable cells - changing these values will cause the generator to work incorrectly
red	editable cells with not proper value - correction required before turning on the generator

Figure 23. A statusPoints sheet

The maximum number of status points is set to 16. To set the number of visible displayed number status points, fill the "count" cell. All status points use 1 holding register. Polling frequency can be set for reading points (fast, normal, slow).

For each point, it is possible to set the following parameters:

- label: text visible displayed on the main visualization page;
- bitNumber: defines a bit of a holding register responsible for each variable in a component.

5.1.7 Schedulers

A schedulers sheet allows to configure schedules displayed in the visualization web server.

button	scheduler				value				
label	fileName	webTitle	topTextContainerLabel	startingHoldingRegister	unit	scale	falseText	trueText	
Schedule 1	schedule1	iSMA-B-AAC20 Schedule 1	Schedule 1	2000	°C	0,1	null	null	
Schedule 2	schedule2	iSMA-B-AAC20 Schedule 2	Schedule 2	2200	°C	0,1	null	null	
Schedule 3	schedule3	iSMA-B-AAC20 Schedule 3	Schedule 3	2400	null	null	Stop	Start	
Schedule 4	schedule4	iSMA-B-AAC20 Schedule 4	Schedule 4	2500	null	null	Stop	Start	

LEGEND OF CELLS WITH BORDER	
Color	Description
white	editable cells with proper value
grey	not editable cells - changing these values will cause the generator to work incorrectly
red	editable cells with not proper value - correction required before turning on the generator

Figure 24. A schedulers sheet

It is possible to configure up to 4 schedules; in order to set the number of displayed schedules, fill in the "count" cell. Polling frequency can be set in the pointRefreshFrequency field.

For each schedule, it is possible to set the following parameters:

- label: sets a text displayed on a schedule's button on the main page;
- webTitle: sets a text displayed on a tab in a browser;
- topTextContainerLabel: sets a text displayed on top of a page of each schedule in the web server;
- startingHoldingRegister: sets an address of a starting holding register for each schedule (accepts only decimal addresses in a range of 1000-2999);

For numeric schedules, set the additional parameters:

- Unit: unit displayed on the main visualization page;
- Scale: scale of the Modbus holding register for correct reading via Modbus protocol.

For numeric schedules, the falseText and trueText cells have to be left with a null value.

For Boolean schedules, set the additional parameters:

- falseText: text displayed for a false (0) value;
- trueText: text displayed for a true (1) value.

For Boolean schedules, the unit and scale cells have to be left with a null value.

5.1.8 Lexicons

A lexicons sheets allows to enter translations to display the web server in various language versions.

language	translations							contextMenuAdd	contextMenuEdit
name	day1	day2	day3	day4	day5	day6	day7		
english	MONDAY	THUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	SUNDAY	Add event	Edit event
polish	PONIEDZIALEK	WTOREK	ŚRODA	CZWARTEK	PIĄTEK	SOBOTA	NIEDZIELA	Dodaj zdarzenie	Edytuj zdarzenie

Figure 25. A lexicons sheet

The lexicons table allows to define a language of a translation in a first column. Following columns identify web server fields which names can be translated to different language. Each row contains translation to one language. It is possible to introduce unlimited number of languages and translations.

Note: All translated terms have to be put in one row, which refers to a language defined in the first column.

The language used in the web server is defined in the general tab.

5.1.9 Themes

A themes sheet allows to configure variants of the web server's appearance.

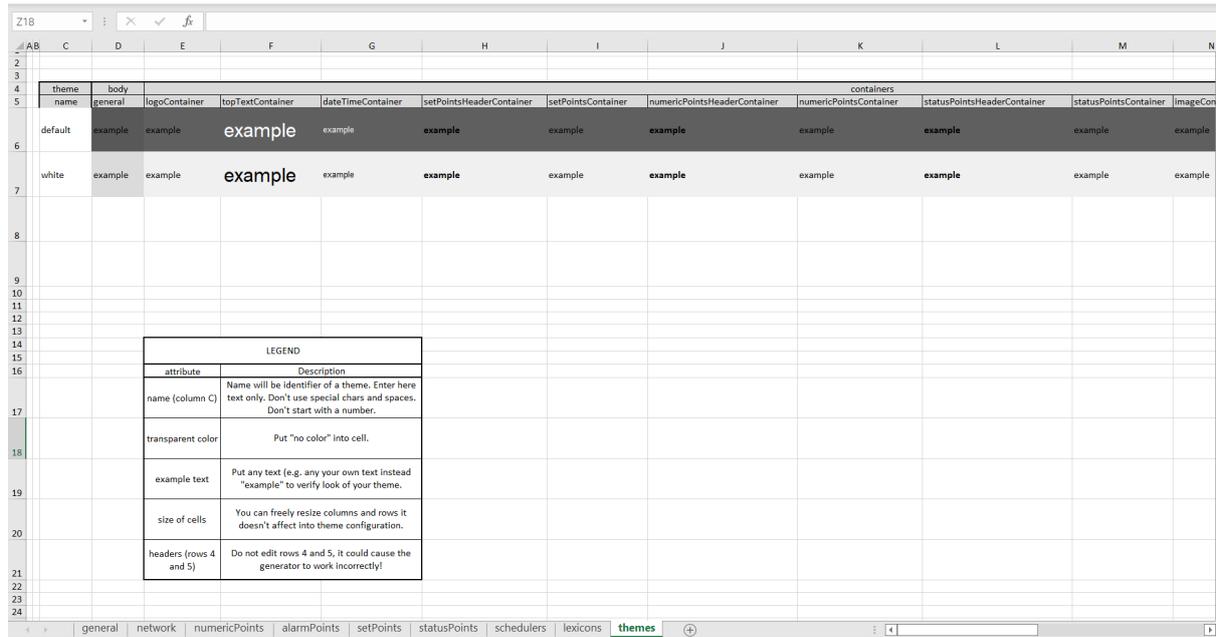


Figure 26. A themes sheet

The themes table allows to define the following parameters of the appearance of each component identified in the table's header:

- background color;
- font color;
- font size;
- font name;
- font weight;
- font style.

First columns defines names of themes. A theme of the web server is selected in the general tab.

6 Logging Into the Visualization Web Server

There are two options to log in to the visualization web server: either manually or with autologin.

6.1 Manual Login

- In order to log in to the graphic visualization in the iSMA-B-AAC20, insert the controller's IP address in the URL field of the an Internet browser (preferably, Google Chrome), click 'Enter', and wait until the login site loads.
- When the login site is up, introduce the login ('user') and password ('1357'), and click 'Login'.
- Having properly logged in, the Internet browser redirects to the index.html file. If no such file has been installed in the internal flash memory, the browser shows a standard diagnostic and configuration web page for the iSMA-B-AAC20 controller.
- If the IP address with the name of the file (and location), separated with the '/' symbol, is inserted in the URL field of the Internet browser, then, after logging in, the browser redirects to the indicated location.

Warning!

If, after logging in to graphics the visualization web server, the web page in the Internet browser takes longer than few seconds to load (the web page is still, and the spinning wheel is active), then duplicate the tab, which makes the web page to fully load.

6.2 Setting Autologin to Graphics

To set automatic logging in to own graphics, in the application, go to the iSMA Tool, then to 'app/service/plat', and change the 'Web autologin' slot to true.

Warning!

Please remember that if the 'Web autologin' slot is set to true, then each attempt to log out of the graphics causes the web page to immediately log back in.

Warning!

Autologin always redirects to the path indicated in the URL field of the Internet browser.

Warning!

The option available from the 5.7 firmware.

7 Modbus Registers

7.1 Numeric Points Registers

Modbus Address	Decimal Address	Hex Address	Register Name	Access	Description
41301	1300	514	SensorValue1	Read/write	Value read from the sensor no. 1
41302	1301	515	SensorValue2	Read/write	Value read from the sensor no. 2
41303	1302	516	SensorValue3	Read/write	Value read from the sensor no. 3
41304	1303	517	SensorValue4	Read/write	Value read from the sensor no. 4
41305	1304	518	SensorValue5	Read/write	Value read from the sensor no. 5
41306	1305	519	SensorValue6	Read/write	Value read from the sensor no. 6
41307	1306	51A	SensorValue7	Read/write	Value read from the sensor no. 7
41308	1307	51B	SensorValue8	Read/write	Value read from the sensor no. 8
41309	1308	51C	SensorValue9	Read/write	Value read from the sensor no. 9
41310	1309	51D	SensorValue10	Read/write	Value read from the sensor no. 10
41311	1310	51E	SensorValue11	Read/write	Value read from the sensor no. 11
41312	1311	51F	SensorValue12	Read/write	Value read from the sensor no. 12
41313	1312	520	SensorValue13	Read/write	Value read from the sensor no. 13
41314	1313	521	SensorValue14	Read/write	Value read from the sensor no. 14
41315	1314	522	SensorValue15	Read/write	Value read from the sensor no. 15
41316	1315	523	SensorValue16	Read/write	Value read from the sensor no. 16

Modbus Address	Decimal Address	Hex Address	Register Name	Access	Description
41317	1316	524	SensorValue17	Read/write	Value read from the sensor no. 17
41318	1317	525	SensorValue18	Read/write	Value read from the sensor no. 18
41319	1318	526	SensorValue19	Read/write	Value read from the sensor no. 19
41320	1319	527	SensorValue20	Read/write	Value read from the sensor no. 20
41321	1320	528	SensorValue21	Read/write	Value read from the sensor no. 21
41322	1321	529	SensorValue22	Read/write	Value read from the sensor no. 22
41323	1322	52A	SensorValue23	Read/write	Value read from the sensor no. 23
41324	1323	52B	SensorValue24	Read/write	Value read from the sensor no. 24
41325	1324	52C	SensorValue25	Read/write	Value read from the sensor no. 25
41326	1325	52D	SensorValue26	Read/write	Value read from the sensor no. 26
41327	1326	52E	SensorValue27	Read/write	Value read from the sensor no. 27
41328	1327	52F	SensorValue28	Read/write	Value read from the sensor no. 28
41329	1328	530	SensorValue29	Read/write	Value read from the sensor no. 29
41330	1329	531	SensorValue30	Read/write	Value read from the sensor no. 30

Table 2. List of numeric points Modbus registers

7.2 Alarm Points Register

Modbus Address	Decimal Address	Hex Address	Register Name	Access	Description
41331	1330, bit 0	532	AlarmState1	Read/write	State of the alarm point no. 1

Modbus Address	Decimal Address	Hex Address	Register Name	Access	Description
41331	1330, bit 1	532	AlarmState2	Read/write	State of the alarm point no. 2
41331	1330, bit 2	532	AlarmState3	Read/write	State of the alarm point no. 3
41331	1330, bit 3	532	AlarmState4	Read/write	State of the alarm point no. 4
41331	1330, bit 4	532	AlarmState5	Read/write	State of the alarm point no. 5
41331	1330, bit 5	532	AlarmState6	Read/write	State of the alarm point no. 6
41331	1330, bit 6	532	AlarmState7	Read/write	State of the alarm point no. 7
41331	1330, bit 7	532	AlarmState8	Read/write	State of the alarm point no. 8
41331	1330, bit 8	532	AlarmState9	Read/write	State of the alarm point no. 9
41331	1330, bit 9	532	AlarmState10	Read/write	State of the alarm point no. 10
41331	1330, bit 10	532	AlarmState11	Read/write	State of the alarm point no. 11
41331	1330, bit 11	532	AlarmState12	Read/write	State of the alarm point no. 12
41331	1330, bit 12	532	AlarmState13	Read/write	State of the alarm point no. 13
41331	1330, bit 13	532	AlarmState14	Read/write	State of the alarm point no. 14
41331	1330, bit 14	532	AlarmState15	Read/write	State of the alarm point no. 15
41331	1330, bit 15	532	AlarmState16	Read/write	State of the alarm point no. 16

Table 3. List of alarm points Modbus registers

7.3 Status Points Register

Modbus Address	Decimal Address	Hex Address	Register Name	Access	Description
41332	1331, bit 0	533	StatusState1	Read/write	State of the status point no. 1
41332	1331, bit 1	533	StatusState2	Read/write	State of the status point no. 2
41332	1331, bit 2	533	StatusState3	Read/write	State of the status point no. 3
41332	1331, bit 3	533	StatusState4	Read/write	State of the status point no. 4
41332	1331, bit 4	533	StatusState5	Read/write	State of the status point no. 5
41332	1331, bit 5	533	StatusState6	Read/write	State of the status point no. 6
41332	1331, bit 6	533	StatusState7	Read/write	State of the status point no. 7
41332	1331, bit 7	533	StatusState8	Read/write	State of the status point no. 8
41332	1331, bit 8	533	StatusState9	Read/write	State of the status point no. 9
41332	1331, bit 9	533	StatusState10	Read/write	State of the status point no. 10
41332	1331, bit 10	533	StatusState11	Read/write	State of the status point no. 11
41332	1331, bit 11	533	StatusState12	Read/write	State of the status point no. 12
41332	1331, bit 12	533	StatusState13	Read/write	State of the status point no. 13
41332	1331, bit 13	533	StatusState14	Read/write	State of the status point no. 14
41332	1331, bit 14	533	StatusState15	Read/write	State of the status point no. 15
41332	1331, bit 15	533	StatusState16	Read/write	State of the status point no. 16

Table 4. List of status points Modbus registers

7.4 Numeric Setpoint Registers

Modbus Address	Decimal Address	Hex Address	Register Name	Access	Description
41333	1332	534	NumSetpoint1	Read/write	Value of the numeric setpoint no. 1
41334	1333	535	NumSetpoint2	Read/write	Value of the numeric setpoint no. 2
41335	1334	536	NumSetpoint3	Read/write	Value of the numeric setpoint no. 3
41336	1335	537	NumSetpoint4	Read/write	Value of the numeric setpoint no. 4
41337	1336	538	NumSetpoint5	Read/write	Value of the numeric setpoint no. 5
41338	1337	539	NumSetpoint6	Read/write	Value of the numeric setpoint no. 6
41339	1338	53A	NumSetpoint7	Read/write	Value of the numeric setpoint no. 7
41340	1339	53B	NumSetpoint8	Read/write	Value of the numeric setpoint no. 8
41341	1340	53C	NumSetpoint9	Read/write	Value of the numeric setpoint no. 9
41342	1341	53D	NumSetpoint10	Read/write	Value of the numeric setpoint no. 10
41343	1342	53E	NumSetpoint11	Read/write	Value of the numeric setpoint no. 11
41344	1343	53F	NumSetpoint12	Read/write	Value of the numeric setpoint no. 12
41345	1344	540	NumSetpoint13	Read/write	Value of the numeric setpoint no. 13
41346	1345	541	NumSetpoint14	Read/write	Value of the numeric setpoint no. 14
41347	1346	542	NumSetpoint15	Read/write	Value of the numeric setpoint no. 15

Table 5. List of numeric setpoints Modbus registers

7.5 Boolean Setpoint Register

Modbus Address	Decimal Address	Hex Address	Register Name	Access	Description
41348	1347, bit 0	543	BoolSetpoint1	Read/write	Value of the Boolean setpoint no. 1
41348	1347, bit 1	543	BoolSetpoint2	Read/write	Value of the Boolean setpoint no. 2
41348	1347, bit 2	543	BoolSetpoint3	Read/write	Value of the Boolean setpoint no. 3
41348	1347, bit 3	543	BoolSetpoint4	Read/write	Value of the Boolean setpoint no. 4
41348	1347, bit 4	543	BoolSetpoint5	Read/write	Value of the Boolean setpoint no. 5
41348	1347, bit 5	543	BoolSetpoint6	Read/write	Value of the Boolean setpoint no. 6
41348	1347, bit 6	543	BoolSetpoint7	Read/write	Value of the Boolean setpoint no. 7
41348	1347, bit 7	543	BoolSetpoint8	Read/write	Value of the Boolean setpoint no. 8
41349	1348, bit 0	544	BoolSetpoint9	Read/write	Value of the Boolean setpoint no. 9
41349	1348, bit 1	544	BoolSetpoint10	Read/write	Value of the Boolean setpoint no. 10
41349	1348, bit 2	544	BoolSetpoint11	Read/write	Value of the Boolean setpoint no. 11
41349	1348, bit 3	544	BoolSetpoint12	Read/write	Value of the Boolean setpoint no. 12
41349	1348, bit 4	544	BoolSetpoint13	Read/write	Value of the Boolean setpoint no. 13
41349	1348, bit 5	544	BoolSetpoint14	Read/write	Value of the Boolean setpoint no. 14
41349	1348, bit 6	544	BoolSetpoint15	Read/write	Value of the Boolean setpoint no. 15

Table 6. List of Boolean setpoints Modbus registers

7.6 Schedules Registers

Modbus Address	Decimal Address	Hex Address	Register Name	Access	Description
42001-42116	2000-2115	7D0-843	ModbusNumericSchedule1	Read/write	Value of the numeric schedule no. 1
42201	2200-2315	898-90B	ModbusNumericSchedule2	Read/write	Value of the numeric schedule no. 2
42401-42457	2400-2456	960-998	ModbusBooleanSchedule3	Read/write	Value of the Boolean schedule no. 3
42501-42557	2500-2556	9C4-9FC	ModbusBooleanSchedule4	Read/write	Value of the Boolean schedule no. 4

Table 7. List of schedules Modbus registers