

Integration with LG airconditioner by LG PMBUS00A module

This tutorial presents the integration of LG airconditioner with Grenton

The presented configuration was performed on:

- Object Manager v.1.6.1 (build 221101),
- Gate Modbus 2.0 (FW v1.1.10 (build 2140)) nazwany Gate_Modbus ,
- Moduł LG PMBUS00A

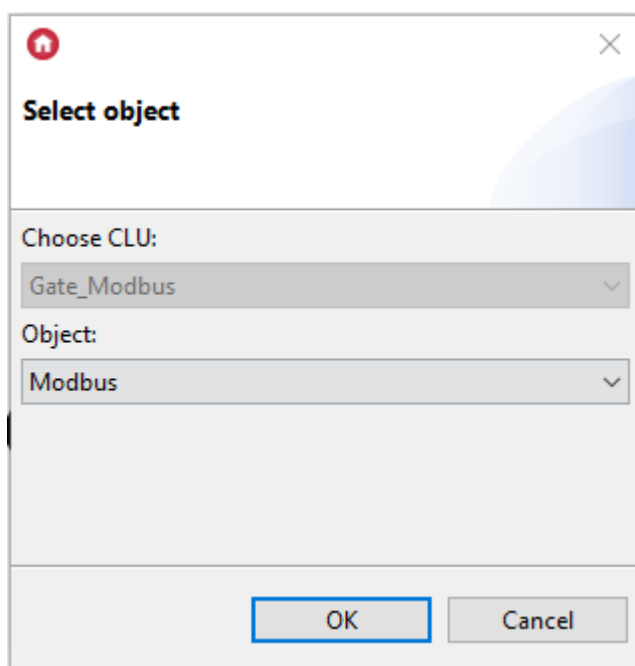
The instruction of the LG PMBUS00A module can be found [here](#).

To integrate Grenton system with airconditioner, please follow the steps described below:

1. Turning on / off the air conditioner

Preparing

- Create virtual object



- Enter the name of the object `lg1_livingroom_ON_OFF_info` and complete embedded features:

Object properties
✕

Name: Type:

Id:

Control
 Events
 Embedded features

Feature name	Current value	Initial value	Unit	Range
DeviceAddress	-	<input type="text" value="1"/>	number	[0-255]
AccessRights	-	<input type="text" value="ReadWrite"/>	-	0,1
RegisterAddress	-	<input type="text" value="0"/>	number	[0-65535]
TransmissionSpeed	-	<input type="text" value="9600"/>	bps	1200,2400,4800,9600,19200,38400
ValueType	-	<input type="text" value="Number"/>	-	1,2,3
BitPosition	-	<input type="text" value="0"/>	number	[0-15]
BitCount	-	<input type="text" value="16"/>	number	[1-32]
RefreshInterval	-	<input type="text" value="1000"/>	number	[0-65535]
ResponseTimeout	-	<input type="text" value="100"/>	number	[10-65535]
Divisor	-	<input type="text" value="1"/>	number	[1-65535]
Endianness	-	<input type="text" value="SwapBytes"/>	-	0,1,2,3
RegisterType	-	<input type="text" value="BitOutputsInputs"/>	-	0,1,2,3
ErrorCode	-		number	
Value	-	<input type="text" value="0"/>	number	
RegisterValue	-		number	
StopBits	-	<input type="text" value="1"/>	-	0,1,2
Parity	-	<input type="text" value="None"/>	-	0,1,2

Auto refresh
 Refresh

```
DeviceAddress - 1
RegisterAddress - 0
```

- Create user feature `AC_livingroom_on_off_info`, as a initial value enter "OFF":

CLU properties

Name: Serial number:

IP: FW:

Control Events Embedded features **User features**

Feature name	Current value	Initial value	Type
AC_livingroom_on_off_info	-	<input type="text" value="OFF"/>	string <input type="button" value="X"/>

- Create script `LG_01_livingroom_On_Off_info` which will allow you to switch on and off airconditioner:

```
if(Gate_Modbus->lg1_livingroom_ON_OFF_info->Value==0) then
Gate_Modbus->AC_livingroom_on_off_info="OFF"
else
Gate_Modbus->AC_livingroom_on_off_info="ON"
end
```

- Attach this script to the `lg1_livingroom_ON_OFF_info` object's OnChange event

Object properties

Name: `lg1_livingroom_ON_OFF_info` Type: Modbus
Id: CLU501001125->MOD9096

Control Events Embedded features

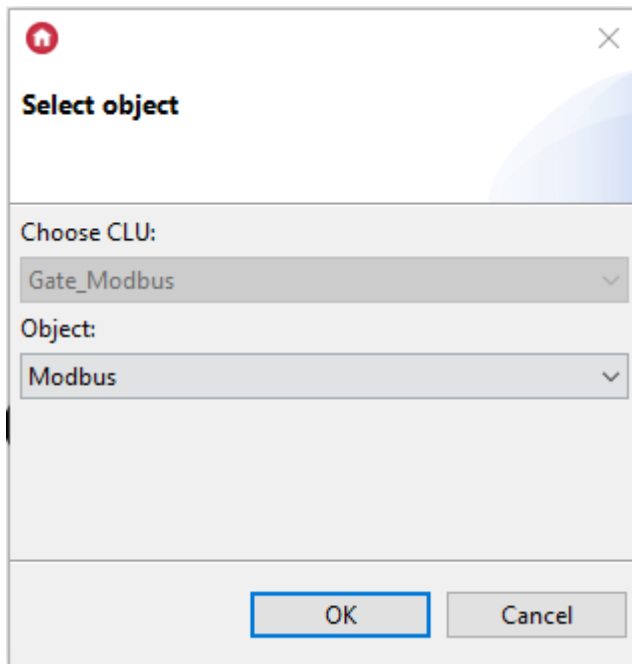
Event name	Assigned commands	Add command
OnChange	<code>Gate_Modbus->LG_01_livingroom_On_Off_info()</code> Assign command ✖	+
OnError		+

OK Cancel

2. Airflow rate change

Preparation

- Create a virtual object `Modbus`



- Enter the name of the object `lg1_livingroom_FanSpeed` and complete embedded features:

Object properties
✕

Name: Type:

Id:

Control
 Events
 Embedded features

Feature name	Current value	Initial value	Unit	Range
DeviceAddress	-	<input type="text" value="1"/>	number	[0-255]
AccessRights	-	<input type="text" value="ReadWrite"/>	-	0,1
RegisterAddress	-	<input type="text" value="1"/>	number	[0-65535]
TransmissionSpeed	-	<input type="text" value="9600"/>	bps	1200,2400,4800,9600,19200,3840
ValueType	-	<input type="text" value="Number"/>		1,2,3
BitPosition	-	<input type="text" value="0"/>	number	[0-15]
BitCount	-	<input type="text" value="16"/>	number	[1-32]
RefreshInterval	-	<input type="text" value="1000"/>	number	[0-65535]
ResponseTimeout	-	<input type="text" value="100"/>	number	[10-65535]
Divisor	-	<input type="text" value="1"/>	number	[1-65535]
Endianess	-	<input type="text" value="SwapBytes"/>	-	0,1,2,3
RegisterType	-	<input type="text" value="HoldingRegisters"/>	-	0,1,2,3
ErrorCode	-		number	
Value	-	<input type="text" value="1"/>	number	
RegisterValue	-		number	
StopBits	-	<input type="text" value="1"/>	-	0,1,2
Parity	-	<input type="text" value="None"/>	-	0,1,2

Auto refresh

```
DeviceAddress - 1
RegisterAddress - 1
```

- Create a script `LG_01_livingroom_FanSpeed_up` which will allow you to increase the airflow rate

```
if(Gate_Modbus->lg1_livingroom_ON_OFF_info->Value==0) then
Gate_Modbus->lg1_livingroom_ON_OFF_info->SetValue(1)
elseif(Gate_Modbus->lg1_livingroom_FanSpeed->Value==1) then
Gate_Modbus->lg1_livingroom_FanSpeed->SetValue(2)
elseif(Gate_Modbus->lg1_livingroom_FanSpeed->Value>=2) then
Gate_Modbus->lg1_livingroom_FanSpeed->SetValue(3)
end
```

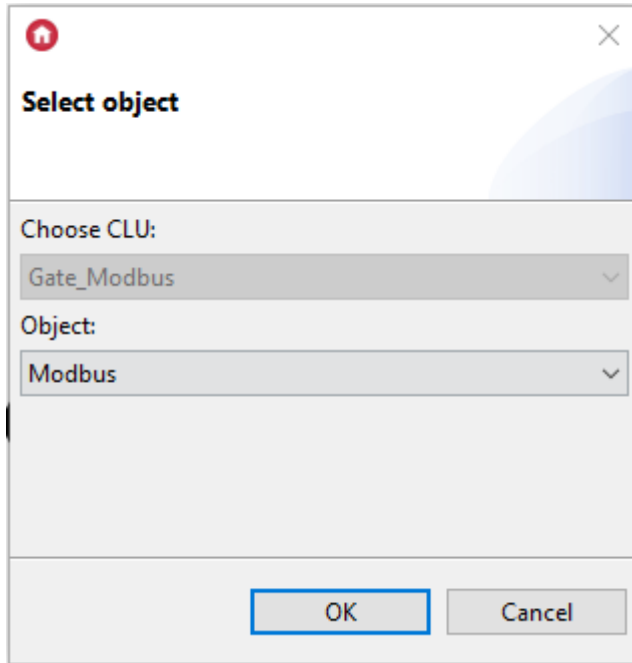
- Create a script `LG_01_livingroom_FanSpeed_down` which will allow you to decrease the airflow rate

```
if(Gate_Modbus->lg1_livingroom_ON_OFF_info->Value==3) then
Gate_Modbus->lg1_livingroom_ON_OFF_info->SetValue(2)
elseif(Gate_Modbus->lg1_livingroom_FanSpeed->Value==2) then
Gate_Modbus->lg1_livingroom_FanSpeed->SetValue(1)
elseif(Gate_Modbus->lg1_livingroom_FanSpeed->Value<=1) then
Gate_Modbus->lg1_livingroom_FanSpeed->SetValue(0)
end
```

3. Temperature control

Preparing

- Create virtual object



- Enter the name of the object `lg1_livingroom_Target_temp` and complete embedded features:

Object properties

Name: `lg1_livingroom_Target_temp` Type: `Modbus`
 Id: `CLU501001125->MOD3036`

Control Events **Embedded features**

Feature name	Current value	Initial value	Unit	Range
DeviceAddress	-	1	number	[0-255]
AccessRights	-	ReadWrite	-	0,1
RegisterAddress	-	2	number	[0-65535]
TransmissionSpeed	-	9600	bps	1200,2400,4800,9600,19200,38400
ValueType	-	Number	-	1,2,3
BitPosition	-	0	number	[0-15]
BitCount	-	16	number	[1-32]
RefreshInterval	-	1000	number	[0-65535]
ResponseTimeout	-	100	number	[10-65535]
Divisor	-	10	number	[1-65535]
Endianness	-	SwapBytes	-	0,1,2,3
RegisterType	-	HoldingRegisters	-	0,1,2,3
ErrorCode	-		number	
Value	-	22	number	
RegisterValue	-		number	
StopBits	-	1	-	0,1,2
Parity	-	None	-	0,1,2

Auto refresh

```
DeviceAddress - 1
RegisterAddress - 2
```

- Create script `LG_01_livingroom_Target_temp_up` which will allow you to increase the set temperature:

```
if(Gate_Modbus->lg1_livingroom_ON_OFF_info->Value==0) then
Gate_Modbus->lg1_livingroom_ON_OFF_info->SetValue(1)
elseif(Gate_Modbus->lg1_livingroom_Target_temp->Value>=18 and Gate_Modbus->lg1_livingroom_Target_temp->Value<=24) then
Gate_Modbus->lg1_livingroom_Target_temp->SetValue(Gate_Modbus->lg1_livingroom_Target_temp->Value+1)
else
Gate_Modbus->lg1_livingroom_Target_temp->SetValue(18)
end
```

- Create script `LG_01_livingroom_Target_temp_down`, which will allow you to decrease the set temperature:

```
if(Gate_Modbus->lg1_livingroom_ON_OFF_info->Value==0) then
Gate_Modbus->lg1_livingroom_ON_OFF_info->SetValue(1)
elseif(Gate_Modbus->lg1_livingroom_Target_temp->Value>=19 and Gate_Modbus-
>lg1_livingroom_Target_temp->Value<=25) then
Gate_Modbus->lg1_livingroom_Target_temp->SetValue(Gate_Modbus-
>lg1_livingroom_Target_temp->Value-1)
else
Gate_Modbus->lg1_livingroom_Target_temp->SetValue(25)
end
```

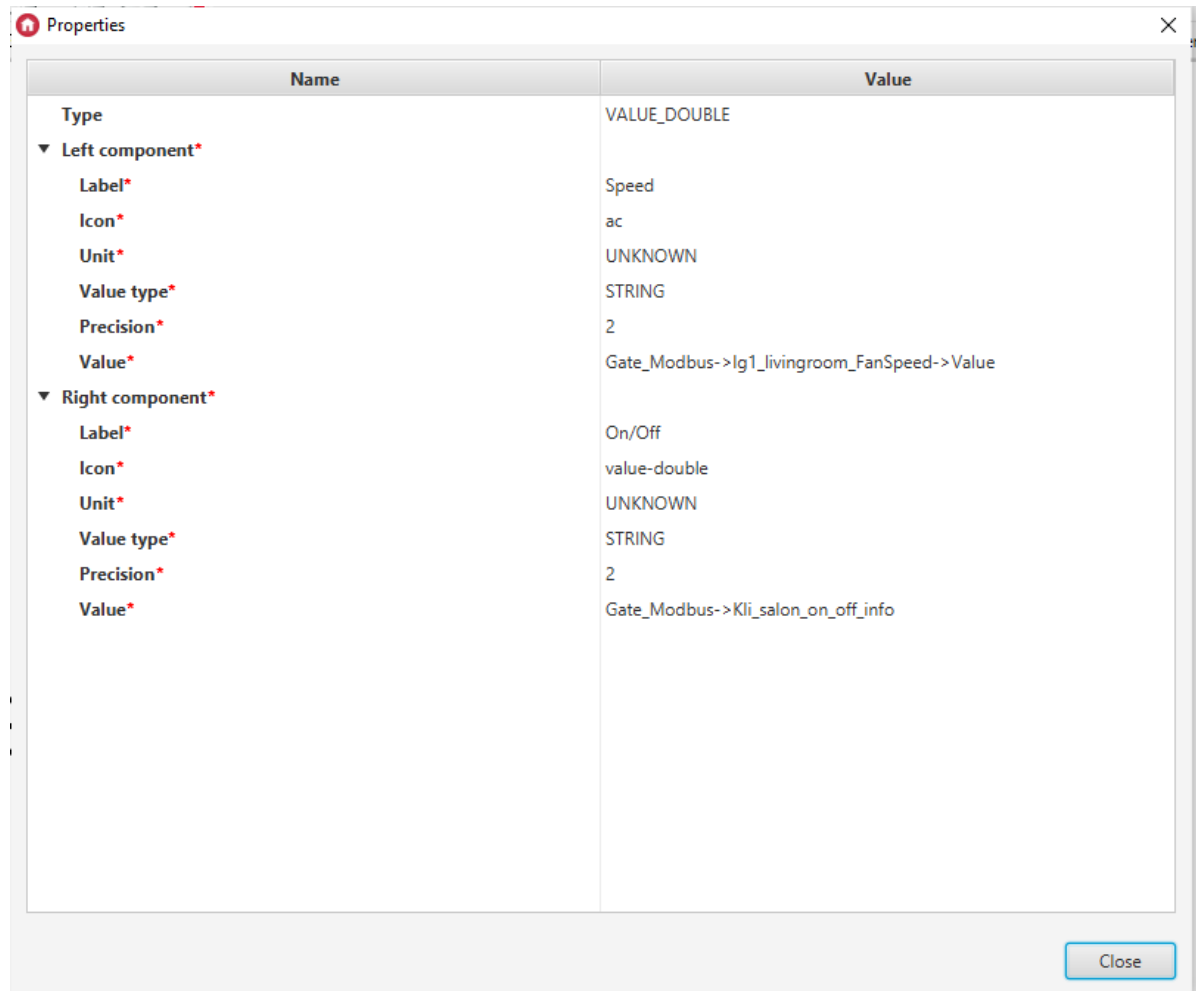
Send the configuration to the Gate module

4. Creating the myGrenton interface

“Air conditioning” page

In the interface, create a page called **Air conditioning** and then add and configure widgets as shown in the screenshots below.

Widget - Type: VALUE_DOUBLE:



Widget - Type: Scene_DOUBLE:

Properties

Name	Value
Type	SCENE_DOUBLE
Background image*	cooling (orange)
▼ Left button*	
Label*	A/C Off
Action click*	Gate_Modbus->lg1_livingroom_ON_OFF_info->SetValue(0)
▼ Right button*	
Label*	A/C On
Action click*	Gate_Modbus->lg1_livingroom_ON_OFF_info->SetValue(1)

Close

Widget - Type: Scene_DOUBLE:

Name	Value
Type	SCENE_DOUBLE
Background image*	cooling (green)
▼ Left button*	
Label*	Speed-
Action click*	Gate_Modbus->LG_01_livingroom_FanSpeed_down()
▼ Right button*	
Label*	Speed+
Action click*	Gate_Modbus->LG_01_livingroom_FanSpeed_up()

Close

Widget - Type: VALUE_V2:

Properties

Name	Value
Type	VALUE_V2
Label*	Set temperature
Icon*	cold
Unit*	UNKNOWN
Value type*	STRING
Precision*	2
Value*	Gate_Modbus->lg1_livingroom_Target_temp->Value

Close

Widget - Type: Scene_DOUBLE:

Name	Value
Type	SCENE_DOUBLE
Background image*	cooling (blue)
▼ Left button*	
Label*	Temp -
Action click*	Gate_Modbus->LG_01_livingroom_Target_temp_down()
▼ Right button*	
Label*	Temp+
Action click*	Gate_Modbus->LG_01_livingroom_Target_temp_up()

Close

Send the created interface to a mobile device

After sending the interface to the phone, it will look like this:

