Huawei inverter & Grenton

This document presents the integration of the Grenton system with a Huawei inverter. Communication between the Smart Home Grenton system and the inverter takes place using the Modbus RTU protocol.

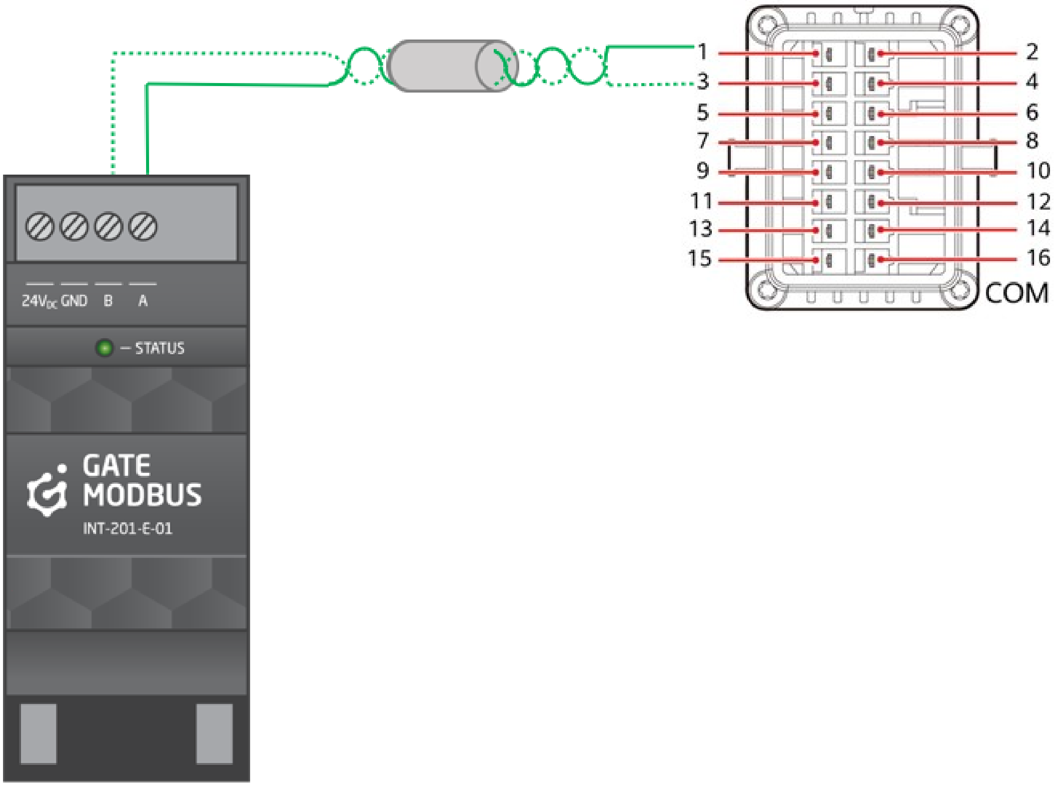
> The presented configuration was performed on:
>
> - Object Manager v.1.6.1 (build 221101),
> - Gate Modbus 2.0 (FW v1.1.10 (build 2140)) called `Gate_Modbus`,
> - Huawei SUN2000-8KTL-M1 with an integrated energy meter and energy storage LUNA2000-5KW-C0 and connected by bus RS485

To integrate Grenton system with Huawei inverter, please follow the steps described below.

1.Connection of Gate Modbus - Inverter communication cables

The Gate Modbus module of the Grenton system is connected to the COM port of the inverter via the pins:

- 1- A
- 3 - B



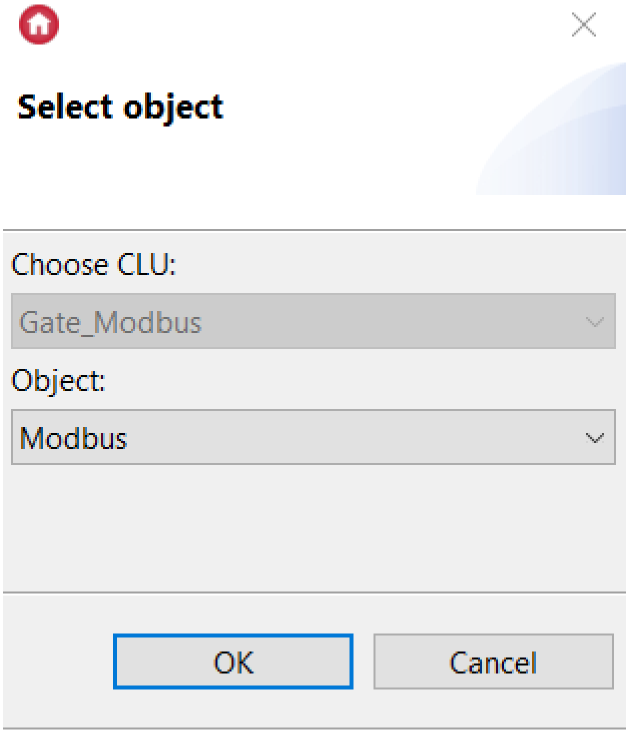
2. System configuration

This description includes an example solution for the readout of selected quantities (register values). On their basis, you can read any values from the register values provided by the equipment manufacturer.

A detailed map of registers is available on the website:

https://javierin.com/wp-content/uploads/sites/2/2021/09/Solar-Inverter-Modbus-Interface-Definitions.pdf

- Create a virtual object `Modbus`

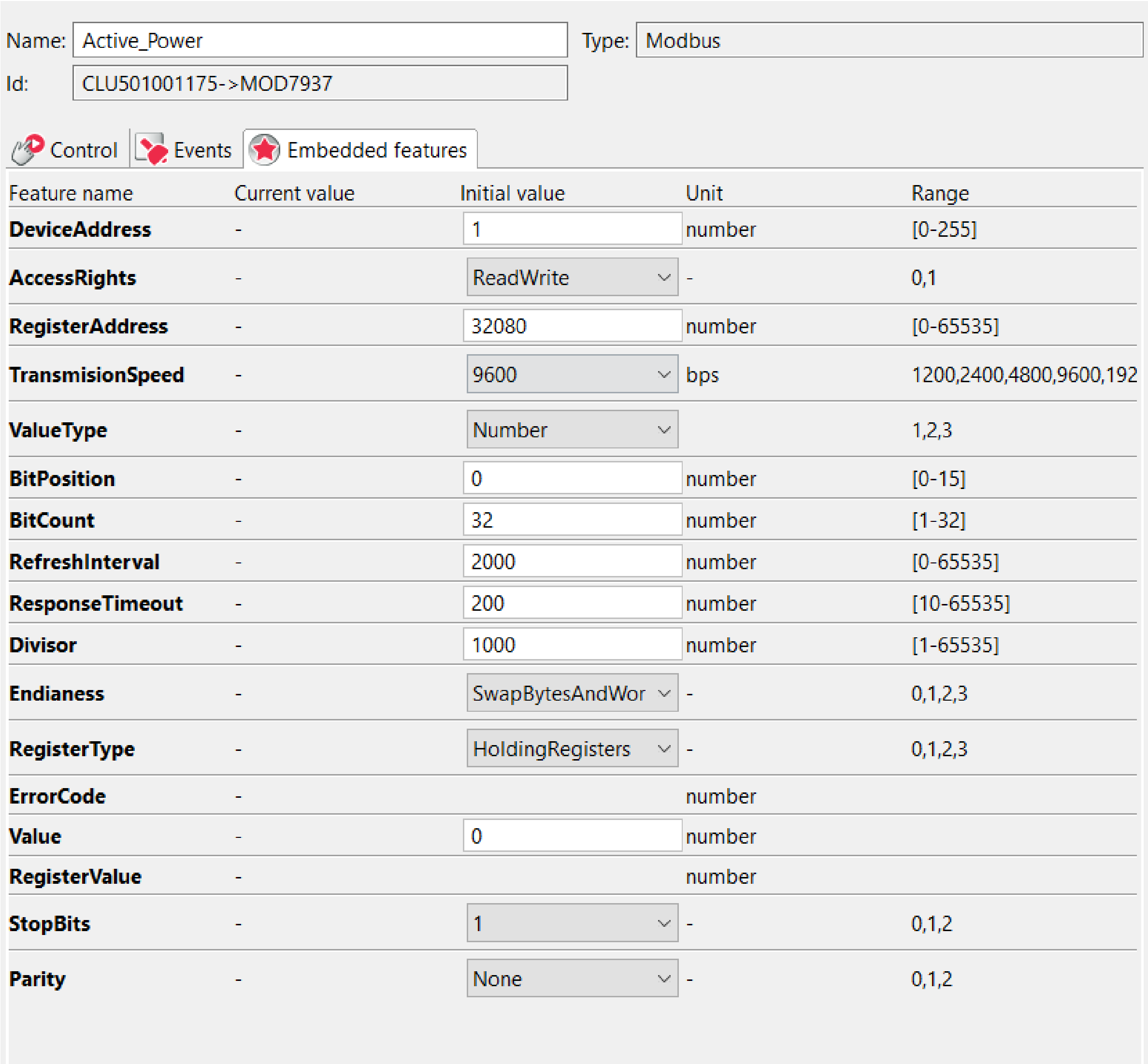


Select object

Choose CLU: Gate_Modbus

Object: Modbus

- Enter the name of the object `Active_Power` and fill in embedded feature:



Name: Active_Power Type: Modbus

Id: CLU501001175->MOD7937

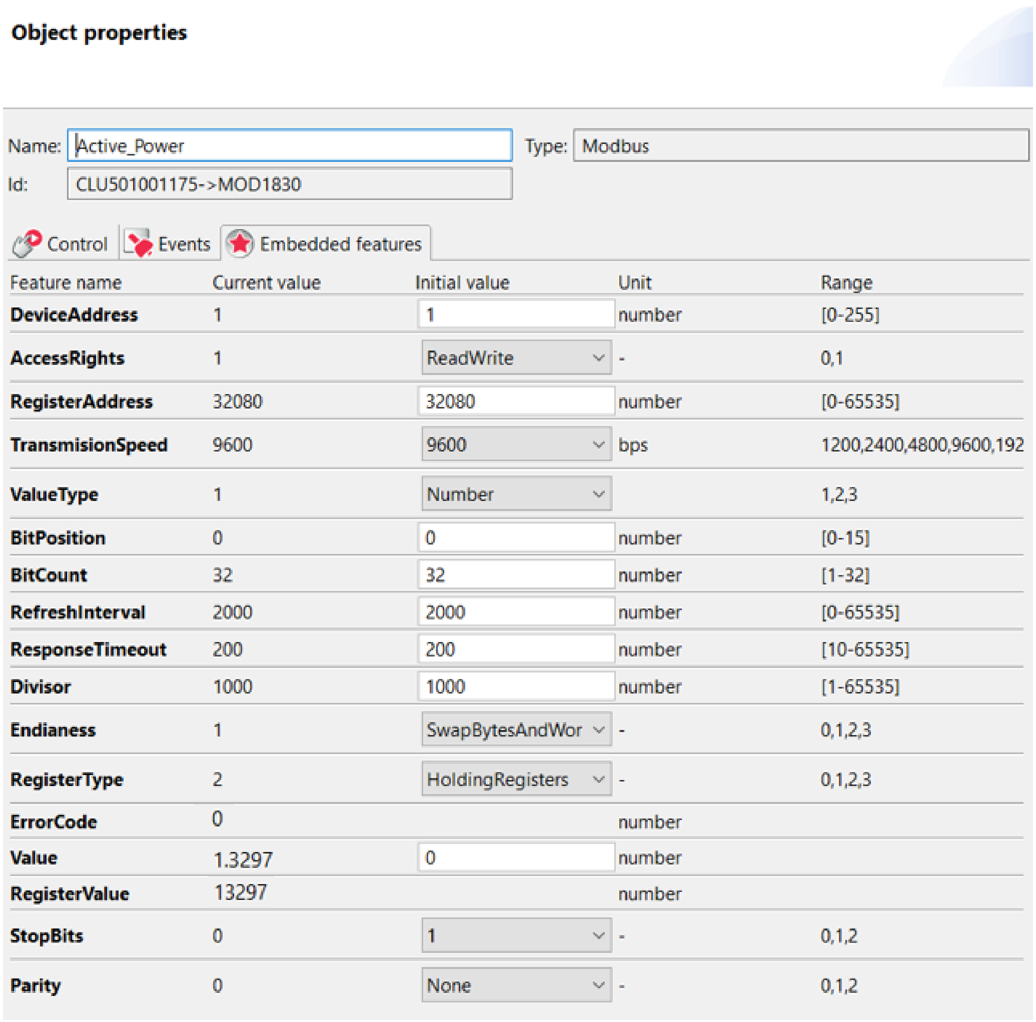
Feature name	Current value	Initial value	Unit	Range
DeviceAddress	-	1	number	[0-255]
AccessRights	-	ReadWrite	-	0,1
RegisterAddress	-	32080	number	[0-65535]
TransmisionSpeed	-	9600	bps	1200,2400,4800,9600,192
ValueType	-	Number		1,2,3
BitPosition	-	0	number	[0-15]
BitCount	-	32	number	[1-32]
RefreshInterval	-	2000	number	[0-65535]
ResponseTimeout	-	200	number	[10-65535]
Divisor	-	1000	number	[1-65535]
Endianess	-	SwapBytesAndWor	-	0,1,2,3
RegisterType	-	HoldingRegisters	-	0,1,2,3
ErrorCode	-		number	
Value	-	0	number	
RegisterValue	-		number	
StopBits	-	1	-	0,1,2
Parity	-	None	-	0,1,2

Parameters to be edited or add:

```
DeviceAddress - 1
RegisterAddres - 32080
BitCount - 32
Divisor - 1000
Endianess - SwapBytesAndWords
```

- Send configuration

- Check the value of the read register



Object properties

Name: Active_Power

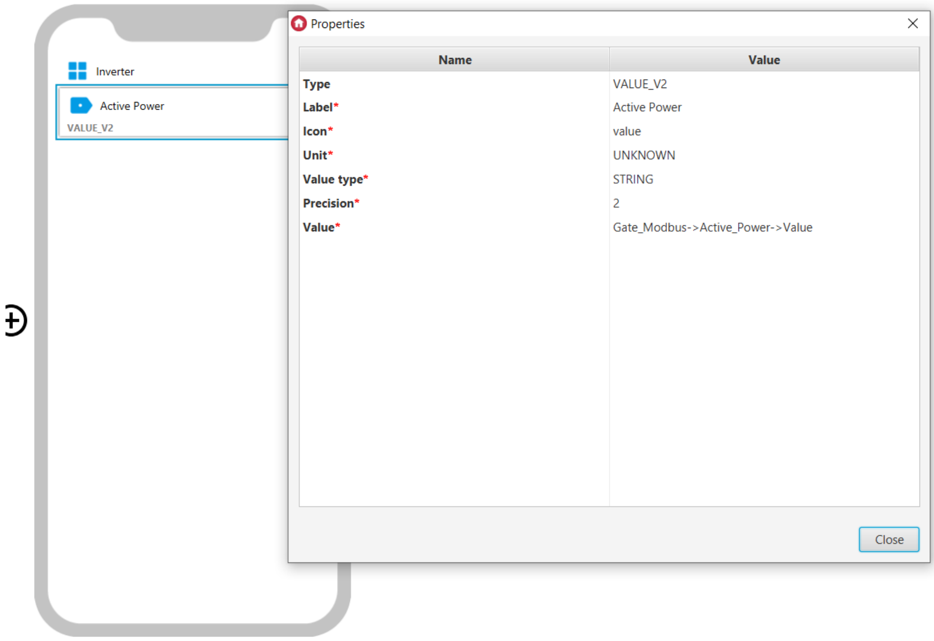
Type: Modbus

Id: CLU501001175->MOD1830

Feature name	Current value	Initial value	Unit	Range
DeviceAddress	1	1	number	[0-255]
AccessRights	1	ReadWrite	-	0,1
RegisterAddress	32080	32080	number	[0-65535]
TransmisionSpeed	9600	9600	bps	1200,2400,4800,9600,192
ValueType	1	Number		1,2,3
BitPosition	0	0	number	[0-15]
BitCount	32	32	number	[1-32]
RefreshInterval	2000	2000	number	[0-65535]
ResponseTimeout	200	200	number	[10-65535]
Divisor	1000	1000	number	[1-65535]
Endianess	1	SwapBytesAndWor	-	0,1,2,3
RegisterType	2	HoldingRegisters	-	0,1,2,3
ErrorCode	0		number	
Value	1.3297	0	number	
RegisterValue	13297		number	
StopBits	0	1	-	0,1,2
Parity	0	None	-	0,1,2

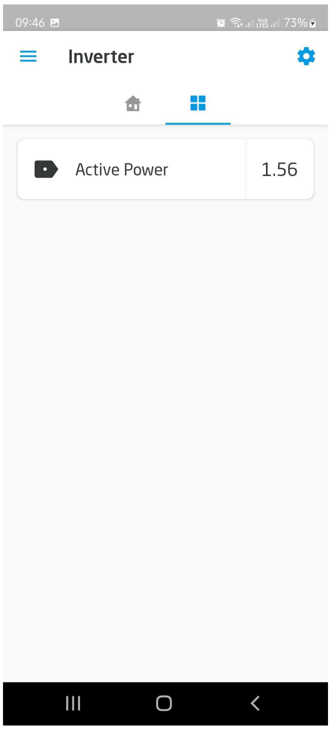
3. Displaying the read values on the myGrenton application

Create an interface with a widget `Value_V2` and complete it as below



Name	Value
Type	VALUE_V2
Label*	Active Power
Icon*	value
Unit*	UNKNOWN
Value type*	STRING
Precision*	2
Value*	Gate_Modbus->Active_Power->Value

After sending the interface, the values are constantly updated. Similarly, the rest of the data can be read from the inverter.



Active Power 1.56