

# MODBUS CONFIGURATOR BLUE'LOG XM / XC

Item no.: 557.012



## Creation of blue'Log specific Modbus drivers

### LICENSE DESCRIPTION

For connection of a wide range of devices meteocontrol offers the blue'Log XM / XC all-in-one driver for standardized communication interfaces. The all-in-one driver is continuously getting extended by meteocontrol. All currently supported devices can be seen via the "blue'Log XM / XC compatibility check" on meteocontrol homepage.

Next to the all-in-one driver users can create blue'Log specific Modbus driver profiles via the web front end of the data logger which do not get included in the all-in-one driver. With help of this feature, called "Modbus Configurator blue'Log XM / XC" it is possible to implement project/device specific Modbus mappings.

Created "Modbus profiles" won't get implemented in a blue'Log driver package (all-in-one driver) and are only available on the affected blue'Log.

The "Modbus configurator blue'Log XM / XC license" activates the function.

Please note the use of the feature requires basic knowledge with regard to Modbus (<https://modbus.org/>).

### FEATURES

- + blue'Log specific Modbus driver development via blue'Log web front end
- + Possibility to create several "Modbus profiles" on a single blue'Log
- + "Modbus profiles" can get downloaded from the logger (.json)
- + Import of already existing "Modbus profiles"
- + Detailed "Configuration help" directly on the blue'Log with lot of useful information for each step of the configuration
- + Creation of "Modbus profiles" based on available blue'Log "Device categories" Inverter\*, Sensor, Meter, String monitoring, Status DI external, Tracker, Battery, Genset
- + The selection of measurement values which can get implemented is based on the max. amount of values available for each "Device category" (see "import-specification" on <https://meteocontrol.github.io/> )

\*Please note: Inverter driver profiles created with help of the "Modbus configurator" can't get used for Power Control.

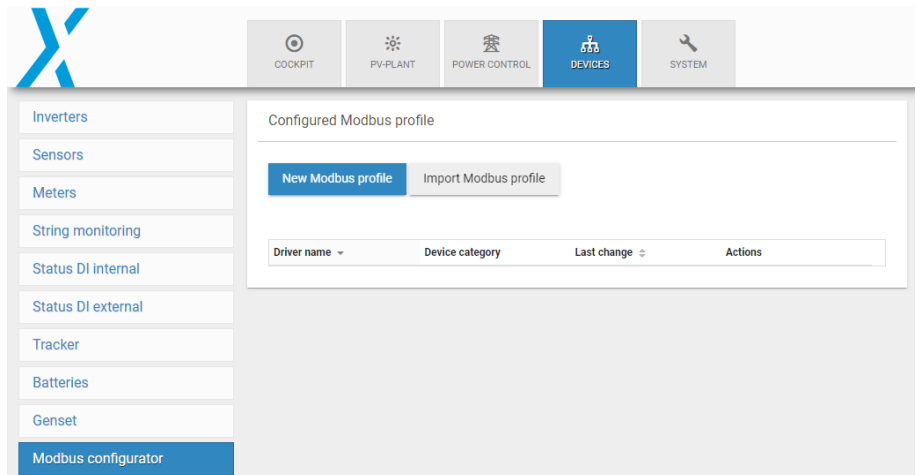
## REQUIREMENTS

- + Basic knowledge regarding „MODBUS“ (<https://modbus.org/>)
- + blue'Log XM / XC
- + Firmware  $\geq$  17.0.11
- + Modbus configurator blue'Log XM / XC license\*

\*The license is linked to a specific device. When ordering, please provide the 14-digit hardware serial number of the data logger.

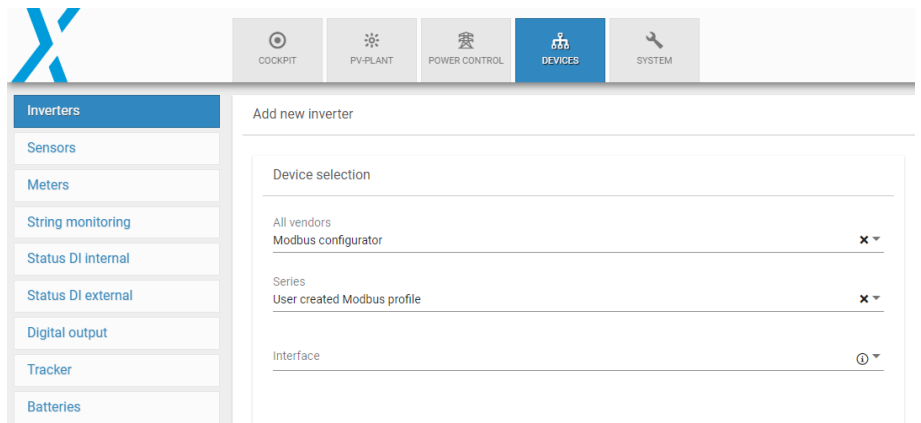
## CONFIGURATION

- + Configuration is done in the menu „Devices – Modbus configurator“
  - Create new Modbus profiles or import existing ones



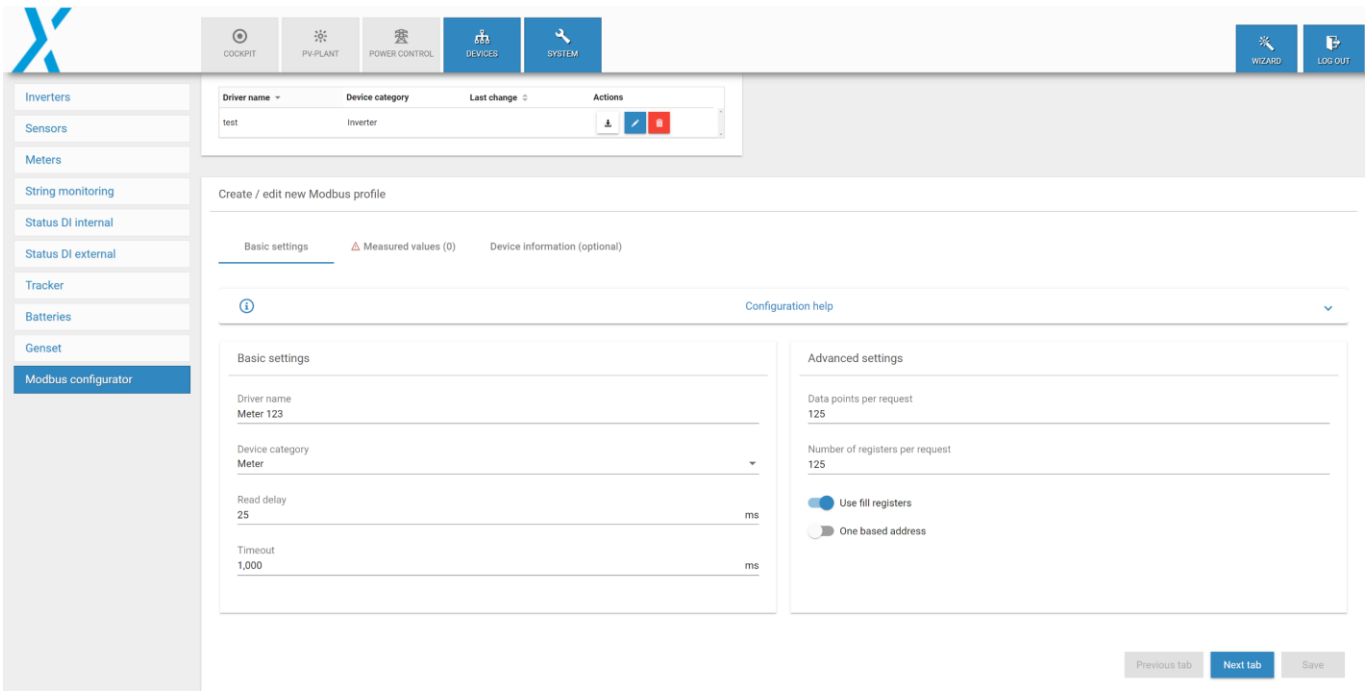
The screenshot shows the 'Modbus configurator' menu in the software interface. The left sidebar contains a list of menu items: Inverters, Sensors, Meters, String monitoring, Status DI internal, Status DI external, Tracker, Batteries, Genset, and Modbus configurator (which is highlighted). The main content area is titled 'Configured Modbus profile' and contains two buttons: 'New Modbus profile' and 'Import Modbus profile'. Below these buttons is a table with the following columns: Driver name, Device category, Last change, and Actions.

- + After successful creation of the “Modbus profile” the driver can get selected in the corresponding device category via vendor selection “Modbus configurator”

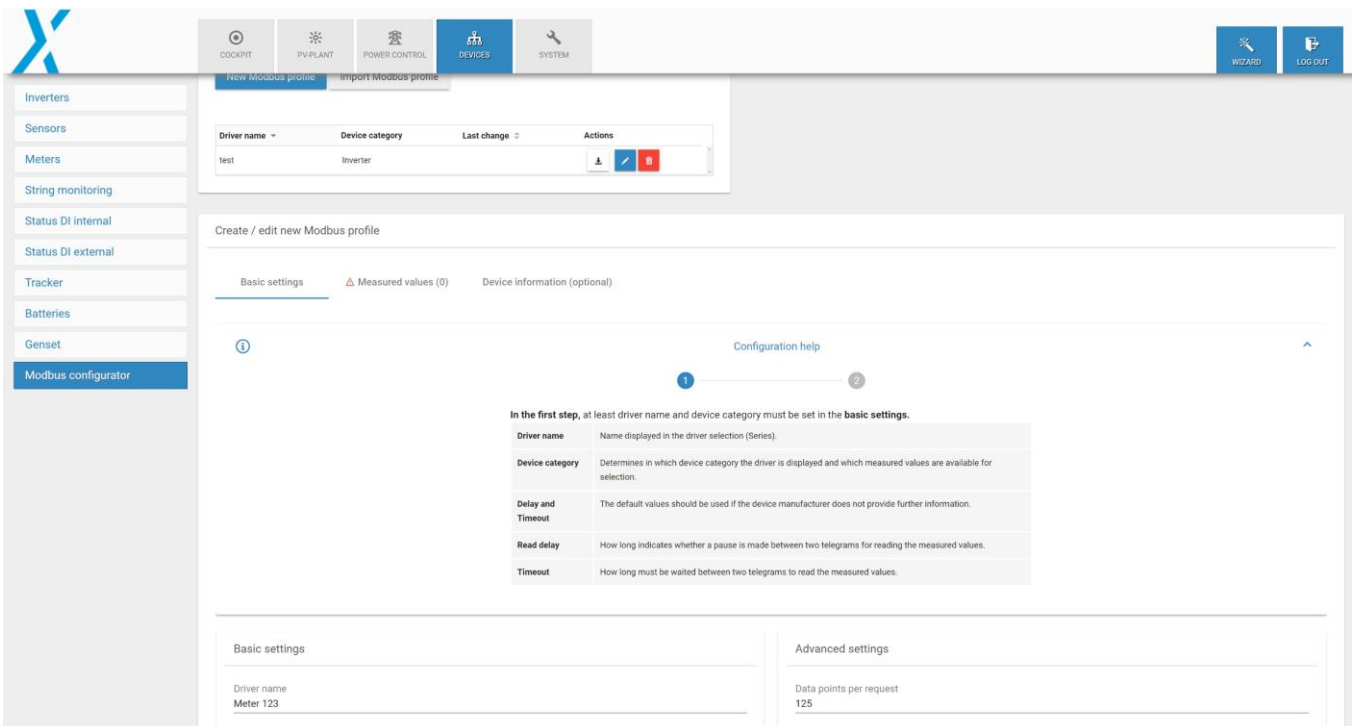


The screenshot shows the 'Add new inverter' screen in the software interface. The left sidebar contains a list of menu items: Inverters, Sensors, Meters, String monitoring, Status DI internal, Status DI external, Digital output, Tracker, and Batteries. The main content area is titled 'Add new inverter' and contains a 'Device selection' section with three dropdown menus: 'All vendors' (selected 'Modbus configurator'), 'Series' (selected 'User created Modbus profile'), and 'Interface' (selected with a circled 'i' icon).

Please find below some impressions how the configuration can be done via the blue'Log XM / XC web front end.



The screenshot shows the 'Modbus configurator' interface. On the left is a navigation menu with options: Inverters, Sensors, Meters, String monitoring, Status DI internal, Status DI external, Tracker, Batteries, Genset, and Modbus configurator (highlighted). The top navigation bar includes COCKPIT, PV-PLANT, POWER CONTROL, DEVICES, and SYSTEM. A table at the top lists a driver named 'test' with category 'Inverter'. Below this is the 'Create / edit new Modbus profile' section with tabs for 'Basic settings', 'Measured values (0)', and 'Device information (optional)'. The 'Basic settings' tab is active, showing fields for Driver name (Meter 123), Device category (Meter), Read delay (25 ms), and Timeout (1,000 ms). The 'Advanced settings' section includes Data points per request (125), Number of registers per request (125), and toggle options for 'Use fill registers' (checked) and 'One based address' (unchecked). At the bottom right are 'Previous tab', 'Next tab', and 'Save' buttons.



This screenshot shows the same 'Modbus configurator' interface but with a 'Configuration help' popup window open. The popup contains a two-step progress indicator (1 and 2) and a table of instructions for the first step. The table lists the following parameters and their descriptions:

In the first step, at least driver name and device category must be set in the basic settings.	
<b>Driver name</b>	Name displayed in the driver selection (Series).
<b>Device category</b>	Determines in which device category the driver is displayed and which measured values are available for selection.
<b>Delay and Timeout</b>	The default values should be used if the device manufacturer does not provide further information.
<b>Read delay</b>	How long indicates whether a pause is made between two telegrams for reading the measured values.
<b>Timeout</b>	How long must be waited between two telegrams to read the measured values.

Below the popup, the 'Basic settings' and 'Advanced settings' sections are visible, showing the same configuration as the previous screenshot.

COCKPIT PV-PLANT POWER CONTROL DEVICES SYSTEM WIZARD LOG OUT

New Modbus profile Import Modbus profile

Driver name	Device category	Last change	Actions
test	Inverter		[Download] [Edit] [Delete]

Create / edit new Modbus profile

Basic settings **Measured values (0)** Device information (optional)

Configuration help

**In the second step, in the advanced settings, the request of the device can be optimized in time with the available parameters.**

The preset values for **data points per request, number of registers per request and fill registers** are the optimal settings if the device supports them.

<b>Data points per request</b>	How many values may be read from the device with one Modbus request, independent of the number of registers.
<b>Number of registers per request</b>	How many 16 bit registers can be read from the device with one Modbus request.
<b>Use fill registers</b>	Reads Modbus registers that are not configured or not occupied in the active state. This way, values from different register ranges can be requested in one read cycle. Reading of unassigned Modbus registers must be supported by the device.
<b>One based address</b>	Defines if the register addresses of this device start at 1 rather than 0.

COCKPIT PV-PLANT POWER CONTROL DEVICES SYSTEM WIZARD LOG OUT

New Modbus profile Import Modbus profile

Driver name	Device category	Last change	Actions
test	Inverter		[Download] [Edit] [Delete]

Create / edit new Modbus profile

Basic settings **Measured values (1)** Device information (optional)

Configuration help

+ Save selected Cancel

Measured Value	Register address	Function code	Datatype	Register count	Factor	Offset	Word / Byteorder	Actions
<input checked="" type="checkbox"/> Measured values Current AC	x 1000	FC 4	U16	1	1	0	High / High	[M] [x] [e]

Measured values count: 1

Previous tab Next tab Save

X

COCKPIT

PV-PLANT

POWER CONTROL

DEVICES

SYSTEM

WIZARD

LOG OUT

- Inverters
- Sensors
- Meters
- String monitoring
- Status DI internal
- Status DI external
- Tracker
- Batteries
- Genset
- Modbus configurator

1
2

### Configuration of the measured values

Measured values can be added to the configuration via the + button. The available measured values depend on the selected device category.

For each measured value, the following information must be entered for a valid configuration.

<b>Register address</b>	Entry of the Modbus register address with which the selected measured value must be queried.	
<b>Function code</b>	Specifies the function code with which the register is to be read. Function code 3 "Read Holding Register" is typically used to read values.	
<b>Datatype</b>	Entry with which data type the measured value should be interpreted and saved.	
<b>Factor</b>	Entry with which factor the acquired value must be scaled. If the manufacturer does not make any specification, the value should be tested with factor 1. Factor is used when converting the measured value before offset.	
<b>Offset</b>	Entry with which offset the acquired value is to be added. If the manufacturer does not make any specification, it should be tested with offset 0. Please note: Factor is used before offset when converting the measured value.	
<b>Word / Byteorder</b>	<b>Format from device</b>	<b>Word / Byteorder</b>
	0xAA 0xBB 0xCC 0xDD	HIGH / HIGH
	0xCC 0xDD 0xAA 0xBB	LOW / HIGH
	0xDD 0xCC 0xBB 0xAA	HIGH / LOW
	0xBB 0xAA 0xDD 0xCC	LOW / LOW
	0xAA 0xBB	Byte order HIGH
	0xBB 0xAA	Byte order LOW
<b>Register count</b>	For function code 1 and 2 the value means how many individual bits are used for the value. With function code 3 and 4 the value can only be set for the data type string. The length means, how many 16 bit registers are used for the string.	

Further information: [www.meteocontrol.com](http://www.meteocontrol.com)