

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.

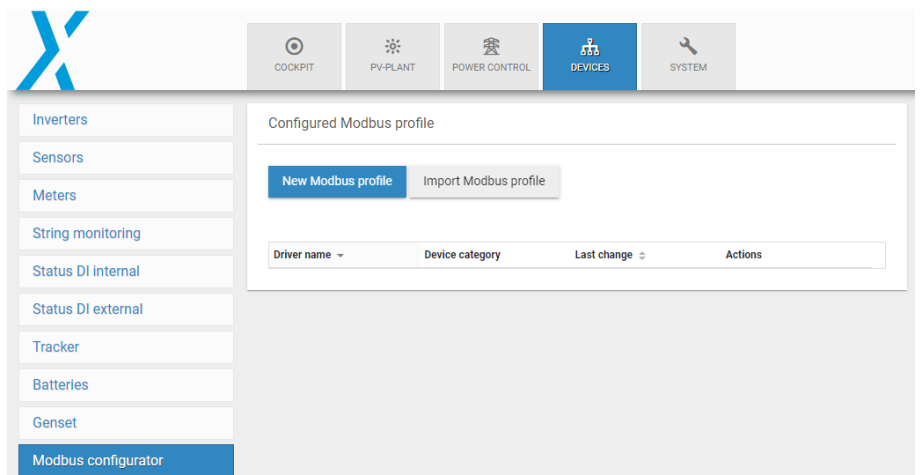
REQUIREMENTS

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

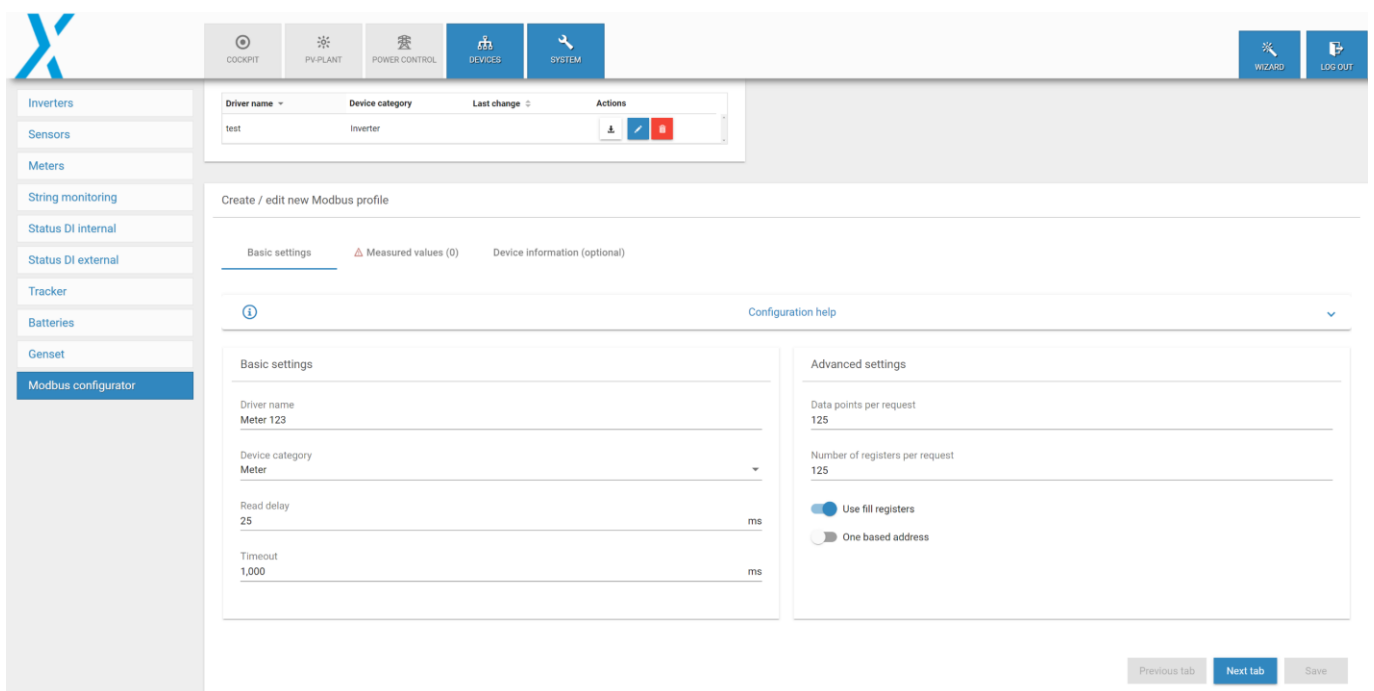
*The license is linked to a specific device. When ordering, please provide the 14-digit hardware serial number of the data logger.

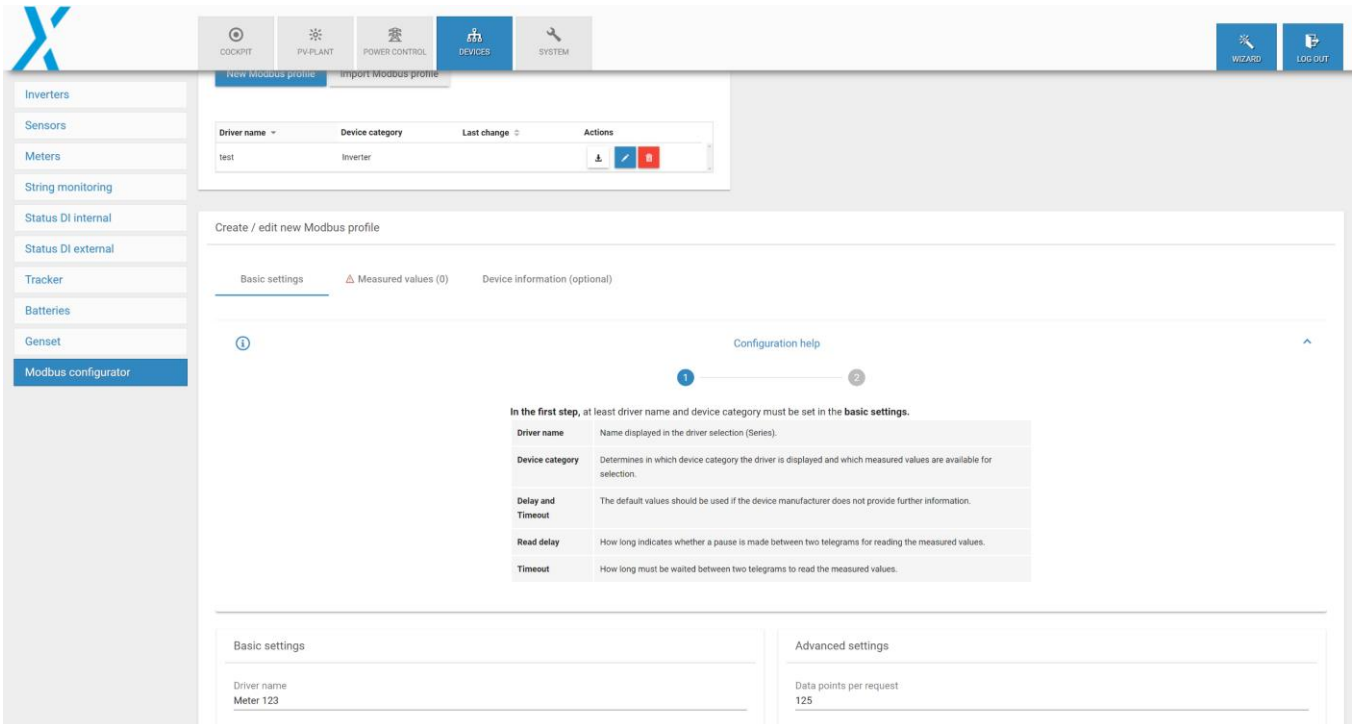
CONFIGURATION

- + Configuration is done in the menu „Devices – Modbus configurator“
 - Create new Modbus profiles or import existing ones
- + After successful creation of the “Modbus profile” the driver can get selected in the corresponding device category via vendor selection “Modbus configurator”



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

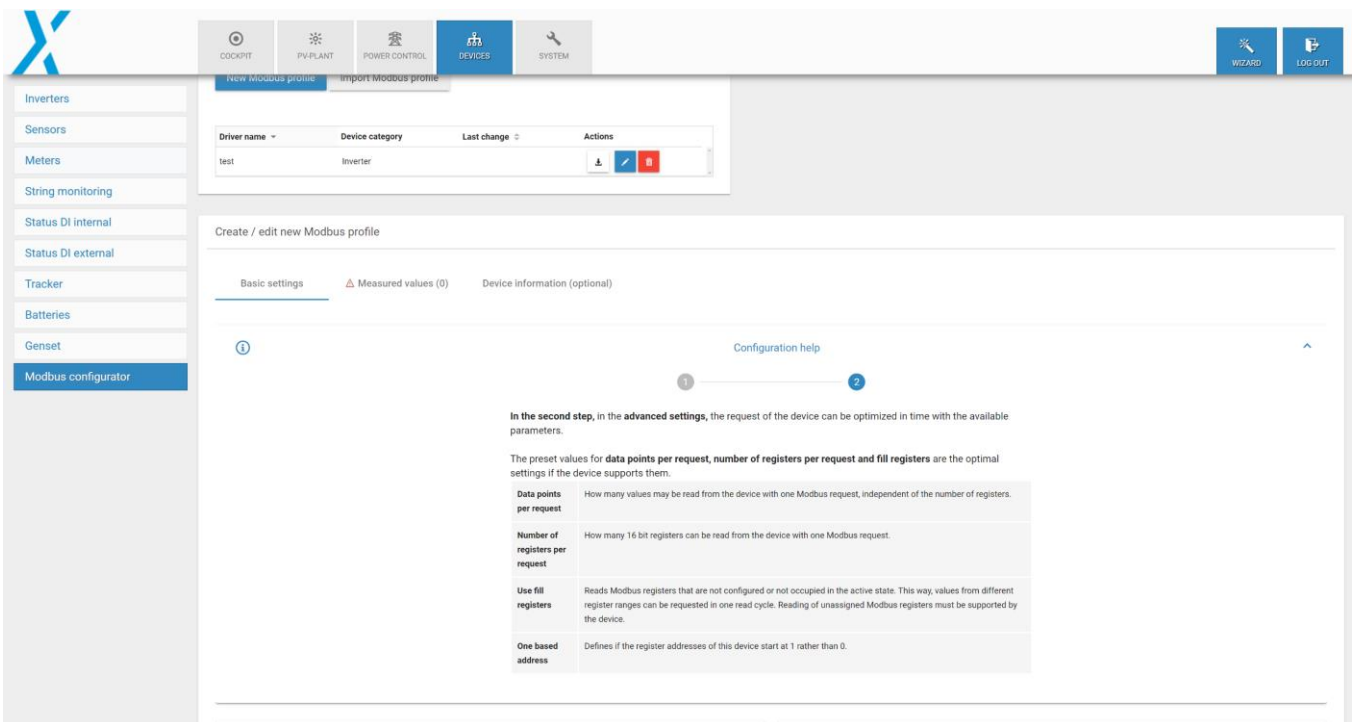




The screenshot shows the 'Modbus configurator' interface. At the top, there are navigation tabs: COCKPIT, PV-PLANT, POWER CONTROL, DEVICES (selected), and SYSTEM. On the right, there are 'WIZARD' and 'LOG OUT' buttons. A sidebar on the left lists various system components, with 'Modbus configurator' highlighted. Below the sidebar, there are buttons for 'New Modbus profile' and 'Import Modbus profile'. A table lists existing profiles with columns for 'Driver name', 'Device category', 'Last change', and 'Actions'. The main area is titled 'Create / edit new Modbus profile' and has three tabs: 'Basic settings' (selected), 'Measured values (0)', and 'Device information (optional)'. A progress indicator shows step 1 of 2. A 'Configuration help' section is expanded, showing instructions for the first step: 'In the first step, at least driver name and device category must be set in the basic settings.' Below this are two tables of help information:

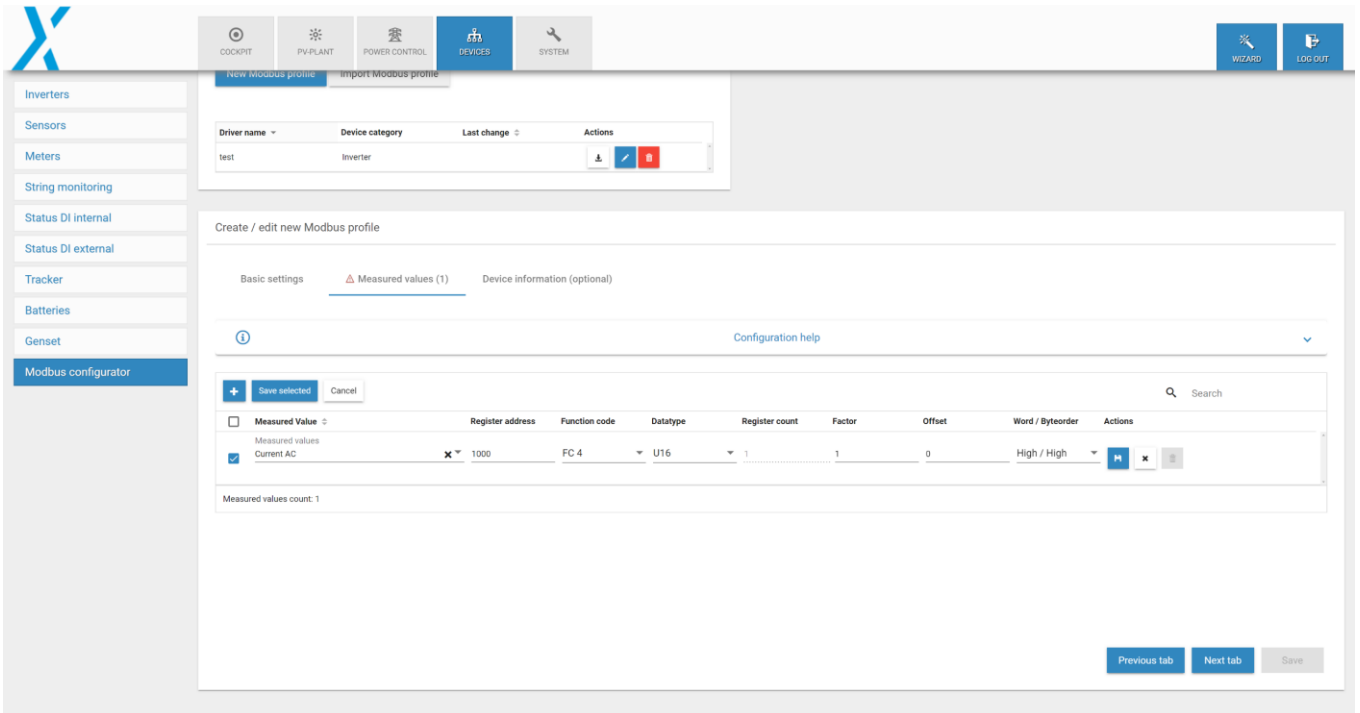
Parameter	Description
Driver name	Name displayed in the driver selection (Series).
Device category	Determines in which device category the driver is displayed and which measured values are available for selection.
Delay and Timeout	The default values should be used if the device manufacturer does not provide further information.
Read delay	How long indicates whether a pause is made between two telegrams for reading the measured values.
Timeout	How long must be waited between two telegrams to read the measured values.

At the bottom, there are two sections: 'Basic settings' and 'Advanced settings'. The 'Basic settings' section shows 'Driver name' set to 'Meter 123'. The 'Advanced settings' section shows 'Data points per request' set to '125'.

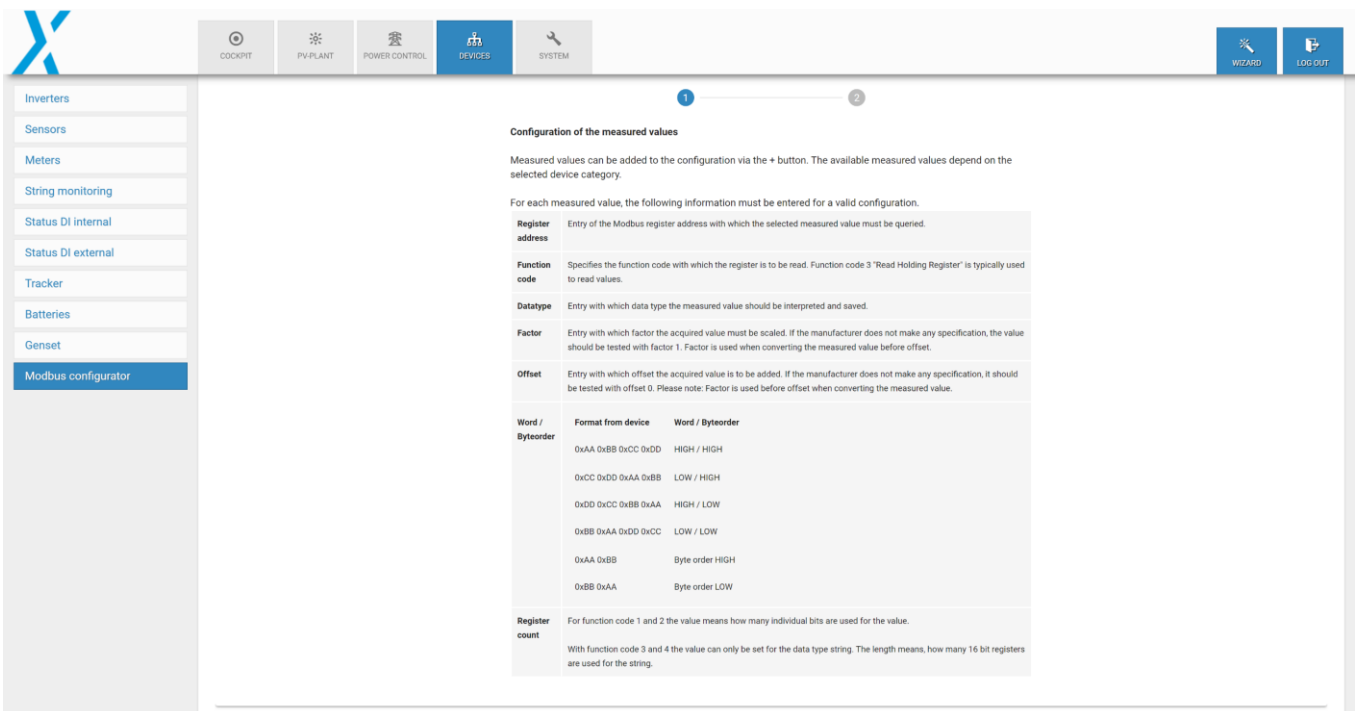


This screenshot shows the same interface as above, but at the second step of configuration. The 'Configuration help' section is updated with instructions for the second step: 'In the second step, in the advanced settings, the request of the device can be optimized in time with the available parameters. 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.' Below this are two tables of help information:

Parameter	Description
Data points per request	How many values may be read from the device with one Modbus request, independent of the number of registers.
Number of registers per request	How many 16 bit registers can be read from the device with one Modbus request.
Use fill registers	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.
One based address	Defines if the register addresses of this device start at 1 rather than 0.



The screenshot shows the 'Modbus configurator' interface. At the top, there are navigation tabs: COCKPIT, PV-PLANT, POWER CONTROL, DEVICES, and SYSTEM. The 'DEVICES' tab is active. On the left, a sidebar lists various system components: Inverters, Sensors, Meters, String monitoring, Status DI internal, Status DI external, Tracker, Batteries, Genset, and Modbus configurator (highlighted). The main area is titled 'Create / edit new Modbus profile' and has three tabs: 'Basic settings', 'Measured values (1)', and 'Device information (optional)'. The 'Measured values (1)' tab is active. It features a table for configuring measured values. The table has columns for 'Measured Value', 'Register address', 'Function code', 'Datatype', 'Register count', 'Factor', 'Offset', 'Word / Byteorder', and 'Actions'. One entry is visible: 'Current AC' with a register address of 1000, function code FC 4, datatype U16, register count 1, factor 1, offset 0, and word/byteorder 'High / High'. Below the table, it says 'Measured values count: 1'. At the bottom right, there are buttons for 'Previous tab', 'Next tab', and 'Save'.



The screenshot shows the 'Configuration of the measured values' section. It includes a progress indicator with steps 1 and 2. The text explains that measured values can be added via a '+' button and that the available values depend on the selected device category. It lists the required information for each measured value configuration:

- Register address:** Entry of the Modbus register address with which the selected measured value must be queried.
- Function code:** Specifies the function code with which the register is to be read. Function code 3 "Read Holding Register" is typically used to read values.
- Datatype:** Entry with which data type the measured value should be interpreted and saved.
- Factor:** 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.
- Offset:** 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.
- Word / Byteorder:** A table showing combinations of 'Format from device' and 'Word / Byteorder'.
- Register count:** 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.

Format from device	Word / Byteorder
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

Further information: www.meteocontrol.com