

# Modbus templates for Solar SMS 32CH LoRaWAN®

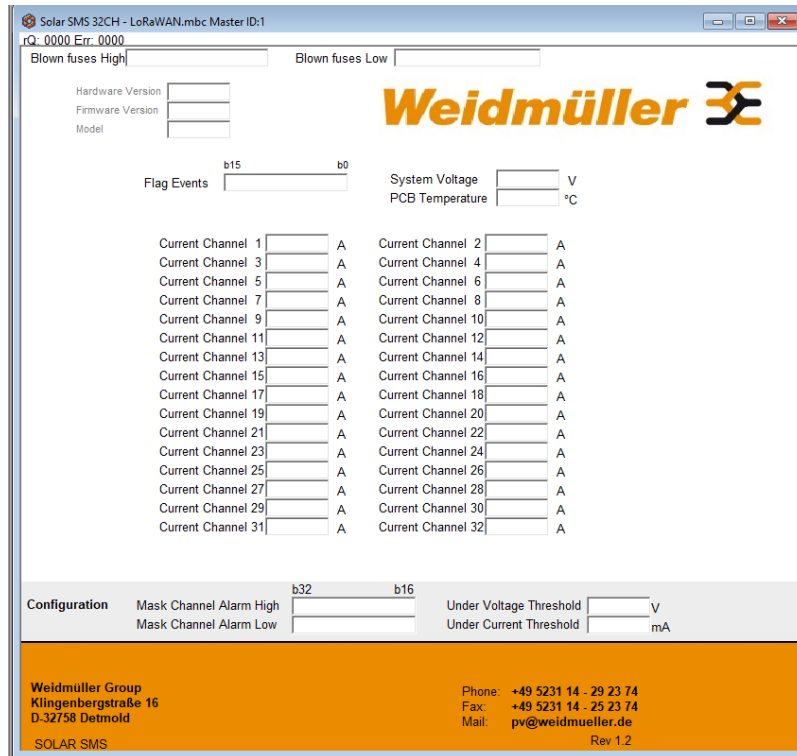
This document provides guidance on how to use the available Modbus templates and how to adjust them when necessary.

Within the Solar SMS – 32CH Modbus Templates folder, you will find the resources MBReader Templates and the MBpoll Templates for **LoRaWAN® Solar SMS version**.

The MBReader and MBpoll templates are ready for direct use.

## 1. MBReader template

The MBReader template is the most intuitive option. Below is an image showing the appearance of the Modbus template.




Solar SMS 32CH - LoRaWAN.mbc Master ID:1

rQ: 0000 Err: 0000

Blown fuses High  Blown fuses Low

Hardware Version   
Firmware Version   
Model

**Weidmüller** 

Flag Events  b15  b0

System Voltage  V  
PCB Temperature  °C

Current Channel 1	<input type="text"/>	A	Current Channel 2	<input type="text"/>	A
Current Channel 3	<input type="text"/>	A	Current Channel 4	<input type="text"/>	A
Current Channel 5	<input type="text"/>	A	Current Channel 6	<input type="text"/>	A
Current Channel 7	<input type="text"/>	A	Current Channel 8	<input type="text"/>	A
Current Channel 9	<input type="text"/>	A	Current Channel 10	<input type="text"/>	A
Current Channel 11	<input type="text"/>	A	Current Channel 12	<input type="text"/>	A
Current Channel 13	<input type="text"/>	A	Current Channel 14	<input type="text"/>	A
Current Channel 15	<input type="text"/>	A	Current Channel 16	<input type="text"/>	A
Current Channel 17	<input type="text"/>	A	Current Channel 18	<input type="text"/>	A
Current Channel 19	<input type="text"/>	A	Current Channel 20	<input type="text"/>	A
Current Channel 21	<input type="text"/>	A	Current Channel 22	<input type="text"/>	A
Current Channel 23	<input type="text"/>	A	Current Channel 24	<input type="text"/>	A
Current Channel 25	<input type="text"/>	A	Current Channel 26	<input type="text"/>	A
Current Channel 27	<input type="text"/>	A	Current Channel 28	<input type="text"/>	A
Current Channel 29	<input type="text"/>	A	Current Channel 30	<input type="text"/>	A
Current Channel 31	<input type="text"/>	A	Current Channel 32	<input type="text"/>	A

**Configuration**

Mask Channel Alarm High  b32  b16

Mask Channel Alarm Low

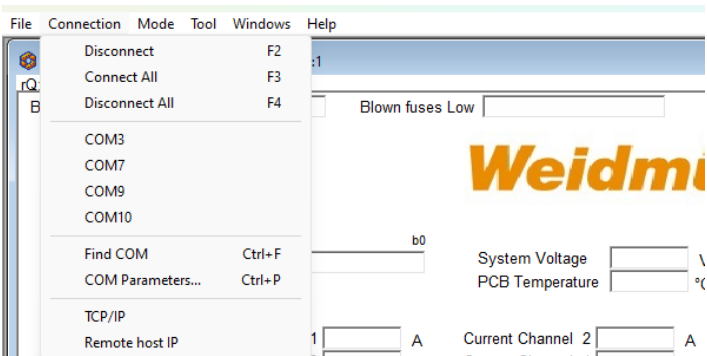
Under Voltage Threshold  V  
Under Current Threshold  mA

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Communication can be established between MBReader and a Modbus device using Serial (COM Ports) and TCP/IP. Using the Connection menu located in the top toolbar, shown in the following image, you can configure and start the communication.

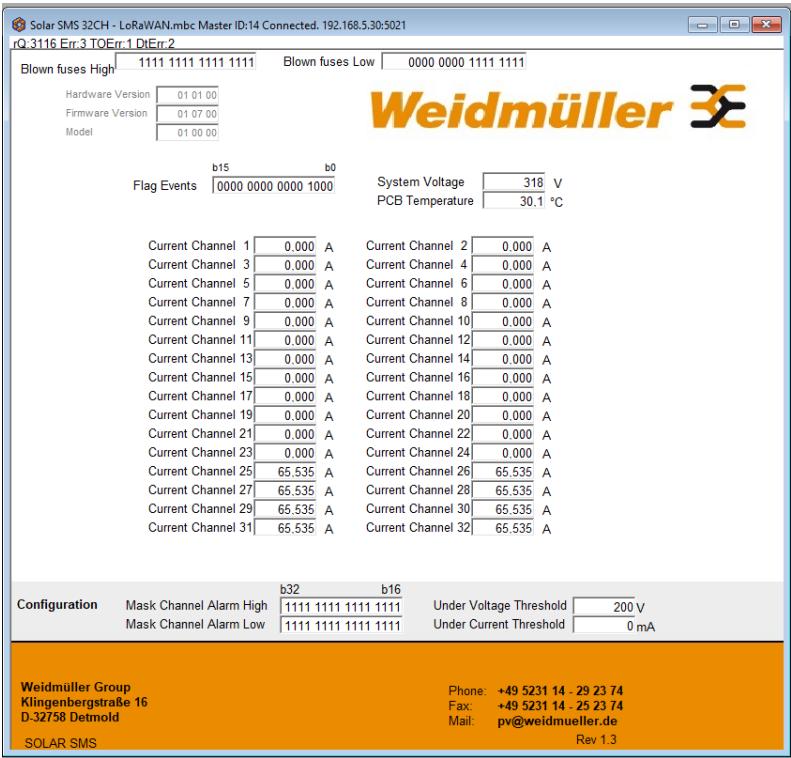


### 1.1. Values Interpretation

Unconnected channels send a value of -1 to differentiate them from channels that detect 0 (since no current flows through the cable). Note that in the Modbus template, **this value of -1 is read as 65535**.

The template is designed for devices **with up to 32 channels**. Therefore, if we connect to a device with fewer than 32 channels, the **unavailable channels will be displayed with a value of 65535**.

The following image shows an example in which we connected to a device with 24 channels. As can be observed, the unavailable channels (from 25 to 32, inclusive) are displayed with the value of 65535.



## 1.2. TCP/IP Communications

If the Modbus device communicates over Ethernet, the operator must select the TCP/IP option within the Connection menu.

When required, the target device's IP address may be set manually using the Remote host IP option. The default port for Modbus TCP communication is 502, unless otherwise specified by the device manufacturer.

## 1.3. Establishing the Connection

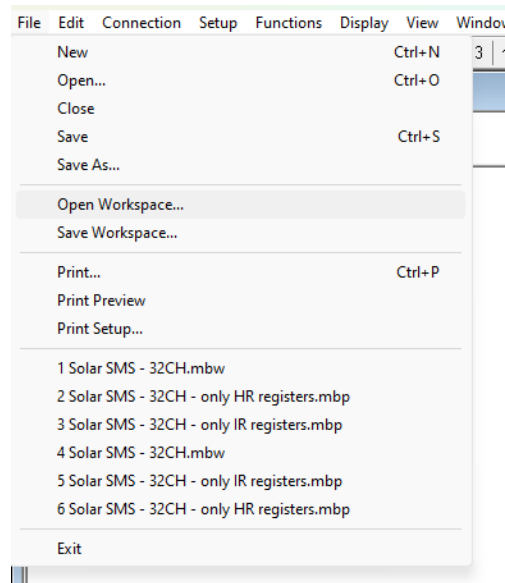
After selecting the communication interface and applying the corresponding configuration, the operator must execute the Connect command from the Connection menu. Once the connection has been established, MBReader will begin updating register values in real time.

Successful communication is confirmed by the absence of timeout or communication error indicators. If communication cannot be established, the operator should verify the selected interface, configuration parameters, device addressing, physical connections, and any potential interference from other applications using the same port.

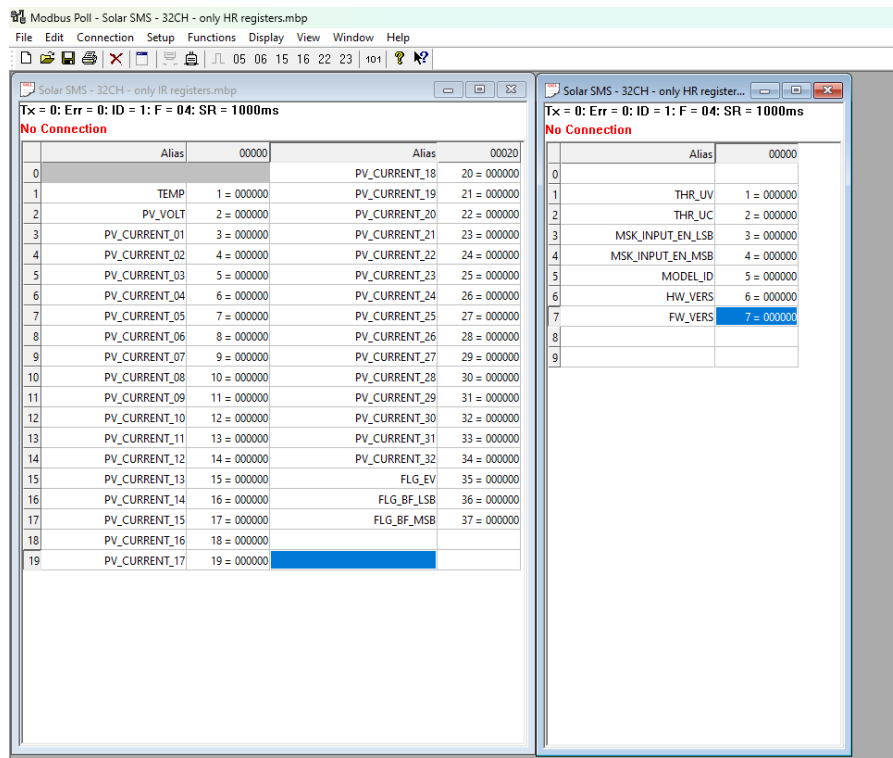
## 2. MBpoll template

MBpoll does not support the visualization of IR and HR registers in the same window. That is why in the **resources** folder you will find two \*.mbp files, the IR registers template and the HR registers template. They can be used simultaneously in the same workspace if you open both (File > Open).

To directly open the two windows, you can use the file **Solar SMS - 32CH - LoRaWAN.mbw** which opens a workspace with the two windows already selected. To do so, you must click File > Open Workspace (as shown below) and select the file mentioned.



If the workspace loads correctly, the application window will display the following elements:

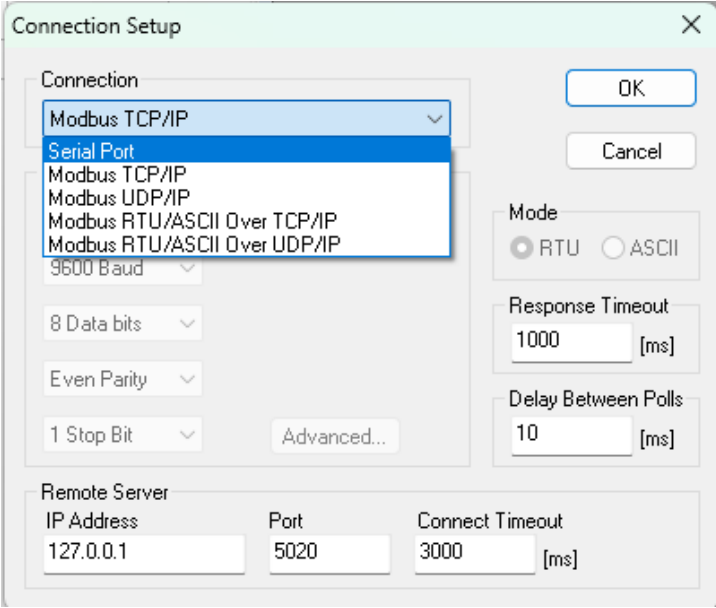


Otherwise, if resources folder is moved or becomes corrupted, MBpoll will be unable to locate the two files required to load the workspace, resulting in an error message. In such cases, the workspace cannot be opened automatically, and each .mbp file stored in the resources folder must be opened manually.

## 2.1. Connection Setup

From the top menu bar, select the Connection tab and then click Connect. The configuration window shown in the following image will appear. In this window, the communication parameters must be configured accordingly.

For **TCP/IP communications**, simply configure the appropriate **IP address** and **Port**.



The image shows a 'Connection Setup' dialog box with the following fields and options:

- Connection:** A dropdown menu with 'Modbus TCP/IP' selected. The dropdown list also shows 'Serial Port', 'Modbus TCP/IP', 'Modbus UDP/IP', 'Modbus RTU/ASCII Over TCP/IP', and 'Modbus RTU/ASCII Over UDP/IP'.
- Mode:** Radio buttons for 'RTU' (selected) and 'ASCII'.
- Response Timeout:** A text field with '1000' and a unit '[ms]'.
- Delay Between Polls:** A text field with '10' and a unit '[ms]'.
- Advanced...:** A button to expand advanced settings.
- Remote Server:**
  - IP Address:** A text field with '127.0.0.1'.
  - Port:** A text field with '5020'.
  - Connect Timeout:** A text field with '3000' and a unit '[ms]'.
- Buttons:** 'OK' and 'Cancel' buttons.