W-Modbus Solarkit

840-2102

Scan for full manual

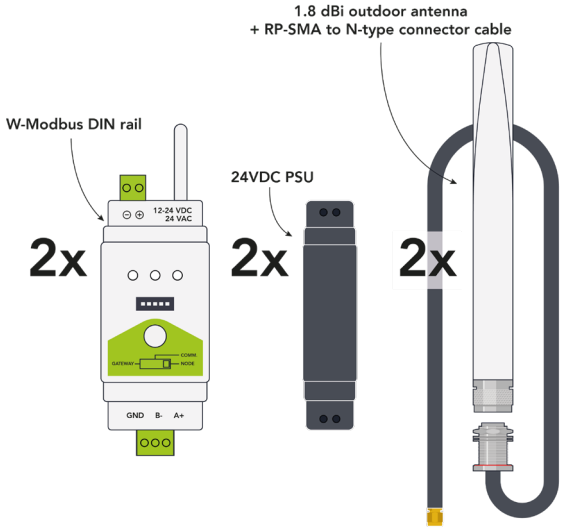
www.lumenradio.com

FCC ID: XRSTIMOWAN201 (wall mount, compact)
XRSTIMOWAN301 (DIN rail)
IC ID: 8879A-TIMOWAN201 (wall mount, compact)
8879A-TIMOWAN301 (DIN rail)

MET: E115504
UL 62368-1
CSA C22.2 No 62368-1

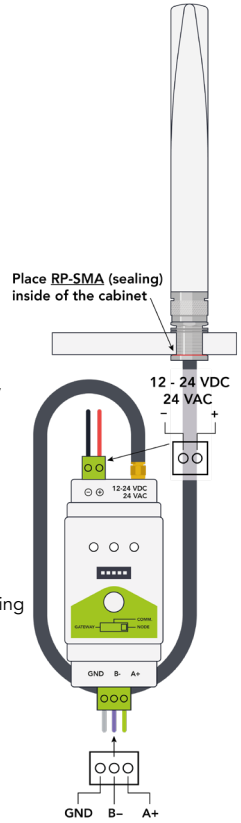
THIS BOX INCLUDES:

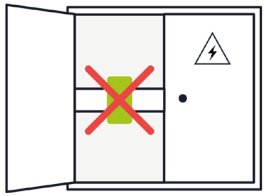
2x W-Modbus DIN rail (pre-configured)
2x 24VDC PSU
2x 1.8 dBi outdoor antenna
2x RP-SMA to N-type connector cable



TECHNICAL DATA

	DIN rail
	840-2120
POWER	
Voltage range AC	24VAC ±10%
Voltage range DC	12-24VDC ±10%
Max power consumption	2.5W
Conductor cross section (stranded)	0.2 - 1.5mm²
Conductor cross section (solid)	0.2 - 1.5mm²
AWG	24 - 16
24V throughput power	N/A
Power source restriction	Only to be powered by a UL-listed LPS power supply of max 15W
ENVIRONMENT	
Ambient operating temperature	-20 to +55°C
Ambient storage temperature	-30 to +80°C
Relative humidity	10 - 95% non-condensing
MECHANICAL	
Dimensions in mm (WxHxD)	36x93x59 (excluding antenna)
Weight	87g
Protection level	IP20





WARNING:

When mounting the unit inside a metal cabinet, **mount the external antenna outside the cabinet.**

WIRING INSTALLATION

Inspect the W-Modbus unit for any visible damage. Mount it onto the DIN rail using the clip-on mechanism.

Install the unit labelled **GATEWAY** next to the inverter. Make sure to install the antenna outside of metal cabinet.

Install the unit labelled **NODE** next to the smart meter. Make sure to install the antenna outside of metal cabinet.

Connect the power supply and RS485 wiring to the W-Modbus unit as shown.

The default RS485 settings are **9600 baud, no parity, and 1 stop bit**. Refer to Table 3.1 (next page) to modify these settings if required.

Ensure the unit and wiring are securely installed. If powered, the LEDs will indicate operation.

APPLICATION AREA

The W-Modbus product transmits Modbus RTU frames wirelessly. It is designed to be used indoors. If used outdoors, this unit must be installed in a protective enclosure with minimum IP65 rating. The product is intended to be used as a Modbus RTU cable replacement.

GENERAL

This manual applies to the W-Modbus Solar kit. All personnel must read these instructions before installation. Improper handling or failure to follow these guidelines will void the warranty. Do not use the product if it is damaged. For more detailed documentation, scan the QR code or visit our website: **www.lumenradio.com**

WARRANTY

The warranty or service agreement will be deemed void if:

1. The product is repaired, modified, or changed, unless such repair, modification or change has been approved by LumenRadio AB; or
2. The serial number on the product has been made illegible or is missing.

ELECTRICAL SAFETY

Only qualified electricians or service personnel trained by LumenRadio may perform interventions in connection with electrical installation. Always follow local/national rules when performing this type of electrical installation. When connecting a 24V isolation transformer, this must be done in accordance with IEC 61558-1.

WIRELESS

W-Modbus uses our proprietary wireless technology called MiraMesh which operates on the 2.4GHz range of the ISM band (2402-2480 MHz) at a max output power of 20 dBm. A Modbus network has a limit of 100 wireless nodes, where any node can be a maximum of 8 hops away from the gateway.

MODBUS

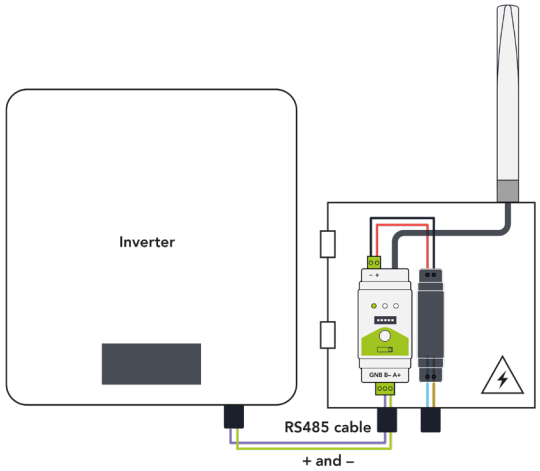
The W-Modbus system supports four different baud rates: 9600, 19200, 38400 and 76800. W-Modbus supports all addresses up to 255, including the reserved range from 248 to 255. The W-Modbus device supports 1 Modbus device and the PRO can be used to connect up to 4 Modbus devices. The wireless system introduces a dynamic response latency, typically 250ms per request. Therefore, it is recommended to set a system response timeout of 1000ms.

MANUFACTURER

LumenRadio AB
Johan Willins gata 6
416 64 Gothenburg
Sweden

GATEWAY INSTALLATION

Din rail marked as GATEWAY goes next to the inverter.

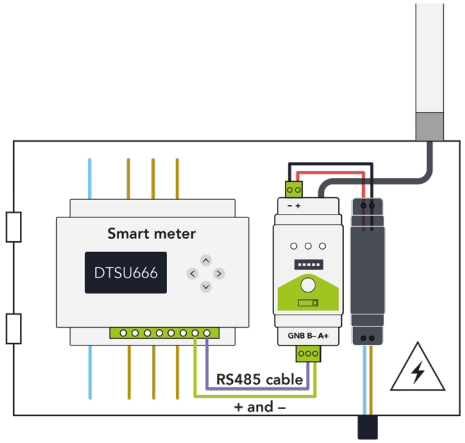


NODE INSTALLATION

Din rail unit marked as **NODE** goes next to the smart meter.

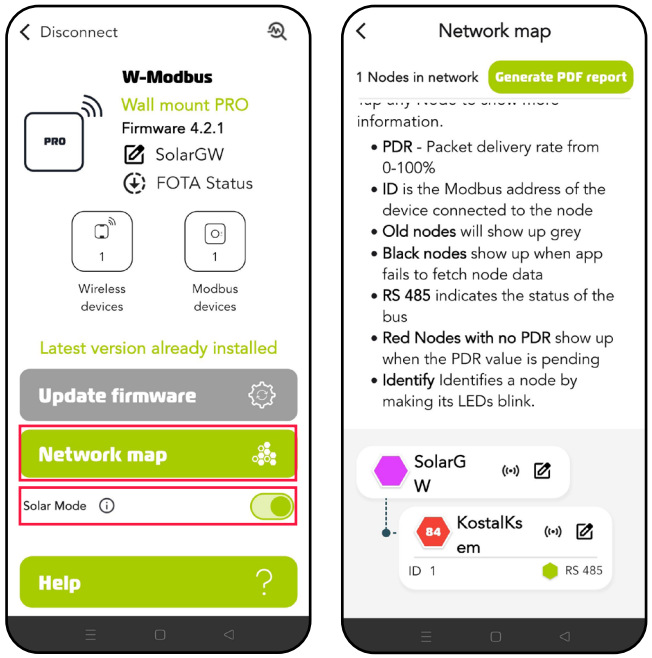
The left LED will flash yellow until it has found the gateway.

The Left LED will be solid green once the network have stabilized. If the node has solid yellow or red, please consider adding a repeater.



VALIDATE YOUR INSTALLATION

Connect with the W-Modbus app to the GW by pressing the button 3 times on the GW. You should see 1 wireless device and 1 Modbus device, and that the solar mode is toggled on. After about 5mins of the node being connected to the GW, check the network map and confirm that the node has a Packet Delivery Rate (PDR) (number within the hexagon) is greater than 96%.



Download the W-Modbus app at:

GET IT ON Google Play

Download on the App Store

TROUBLESHOOTING TIPS

RIGHT LED on GATEWAY or NODE is blinkning RED.

The RS485 cable might be loose or the RS485 settings may need adjustment. Check the inverter's/ smart meter's app/ manual to verify the communication (RS485) settings and ensure the W-Modbus device is configured with the same settings.

A. DIN rail

	1	2	3	4	5
9600 baud	OFF	OFF	-	-	-
19200 baud	OFF	ON	-	-	-
38400 baud	ON	OFF	-	-	-
76800 baud	ON	ON	-	-	-
No parity	-	-	OFF	-	-
Even parity	-	-	ON	-	-
1 stop bit	-	-	-	OFF	-
2 stop bit	-	-	-	ON	-
Node only: use local serial configuration					ON
Use gateway serial configuration on node					OFF

3.1 Dip switch settings

RIGHT LED is off on the GATEWAY

Please restart your inverter, or refer to the inverter manual for instructions on how to restart Modbus communication.

MID LED is NOT rapidly blinking blue/green on the GATEWAY

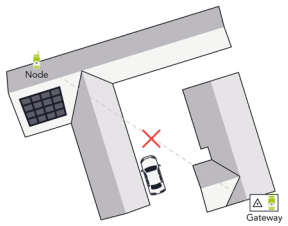
Please restart your inverter, or refer to the inverter manual for instructions on how to restart Modbus communication.

LEFT LED is solid RED on NODE

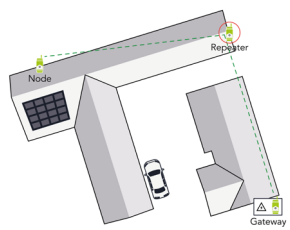
The network signal is weak and a repeater should be considered. See next tip.

LEFT LED is flashing yellow

If the node does not establish a connection with the gateway (GW) within 5 minutes after being powered on, you should place a W-Modbus node as a repeater somewhere between the devices in the network. Detailed instructions for adding a new node into network can be found at www.lumenradio.com/xbus-support/product/840-2120/index.html#commissioning.



Not connecting within 3 minutes?



Add repeater or check the antenna mounting.