The **Energy** Management Platform

Installation Guide – WebdynSunPM

Internet of Things

Solar Energy

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Introduction

The purpose of this guide is to describe the installation and operation of a WebdynSunPM Modbus gateway

Tools and Materials Needed

Read manual before beginning the installation to be sure you have everything you need.

- Laptop with Windows 7/10
- Internet Connectivity (Lan or Dongle)
- MicroSD Card Reader
- Wire Stripper
- Pliers
- Allen Key Set
- Hammer Drill
- Cable Ties
- Saddle Clips
- RJ45 Crimping Tool
- 2 & 4Core Wire for Extension [if needed]
- Screw Driver
- Multi Meter
- Hammer

Internet Connectivity

It is crucial for the Webdyn to have an internet access, either Ethernet or GPRS, in order to enable file transfers between the gateway and a configured remote server, to enable the synchronization of the gateway's internal clock with the one's of general purpose systems.

Ethernet connection

For connection via Ethernet, the following parameters must be supplied:

- IP address of the WebdynSunPM on the local network;
- Subnet mask;
- IP address of the router or ADSL modem;
- IP address of the DNS server.

GPRS connection

For connection via GPRS, it is essential to procure an activated SIM card with a DATA option, and to know the values of the following parameters:

- APN (Access Point Name): Name of the GPRS access point. This depends on the operator and the type of subscription;
- User name and password for connection to the APN.

Understanding Device LED Status

LED on Devices -

LED	Function	Status	Explanation
Power	This indicator represents the power status of the logger	ON	Power On
		OFF	Power OFF
Activity	Operational status of the gateway	Flashing rapidly	Initialization
		ON	Normal Operation
		Flashing rapidly	Initialization
Serial	The three sets of two lights (Tx/Rx) reflect the communication taking place on the three RS485/422 serial buses.	Tx Flash	Data Transmission happening
		Rx Flash	Data Receival happening

WAN	Green	Inactive	Offline and modem switched off
		Slow-flashing green	Offline, but modem attached to the mobile network
		Solid green	Connected to the mobile IP network
		Flashing green when traffic is detected	Ongoing communication with servers
	Orange	Solid orange	Modem initialization
		Slow-flashing orange	Connecting to mobile network
		Rapid-flashing orange	Connecting to the mobile IP network
	Red	Solid red	Error when starting the modem
		Slow-flashing red	Error when connecting to the mobile IP network or during previous communication with servers
		Rapid-flashing red	Connection with remote server in progress
		Flashing red when traffic is detected	At least one error during communication with the server

Accessing the Web Interface

Access to the built-in Web interface on the WebdynSunPM gateway is provided via the gateway's LAN connection. As the gateway does not cross Ethernet signals, when there is a direct connection between the gateway and the computer, a crossover cable must be used. In addition, both the computer used and the gateway must belong to the same subnet. If the WebdynSunPM gateway has a static IP address (the default situation), the computer must also be configured to use a compatible static IP address.

This static address must belong to the same subnet as the WebdynSunPM gateway:

Default Settings	**IP address: 192.168.1.12** **Subnet mask: 255. 255. 255.0**

1. Once your computer has been correctly configured:
2. Launch your Web browser Chrome (version 72.0 and higher); Firefox (version 65.0 and higher); and, Internet Explorer (version 11 and higher).
3. Go to the home page of the WebdynSunPM gateway using the browser's address bar to specify the address http://192.168.1.12.
4. The following window is displayed:

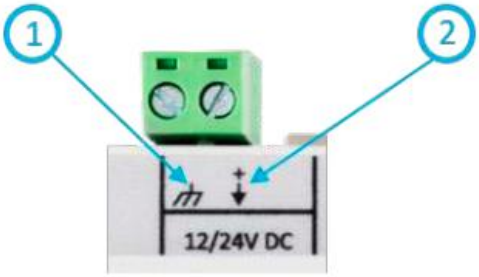
Default Settings	**User Name: userhigh** **Password: high**

Interfaces and Pin Layouts

1. Power Supply

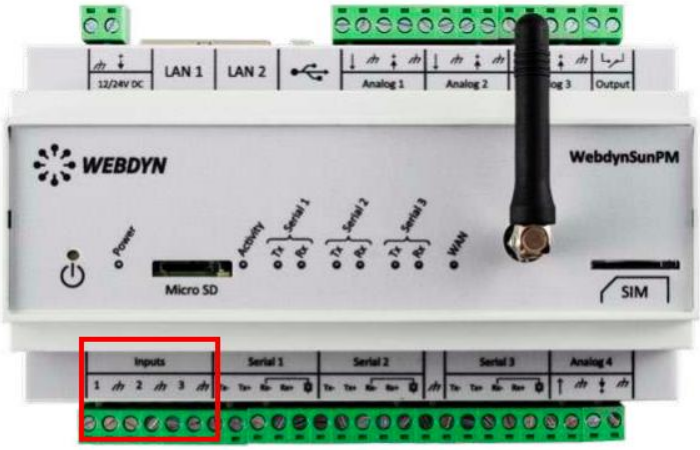
The WebdynSunPM logger can be powered using 12 or 24V DC. The power supply is the two point plug-in terminal block located at the top left of the box.

1 = Ground
2 = Positive



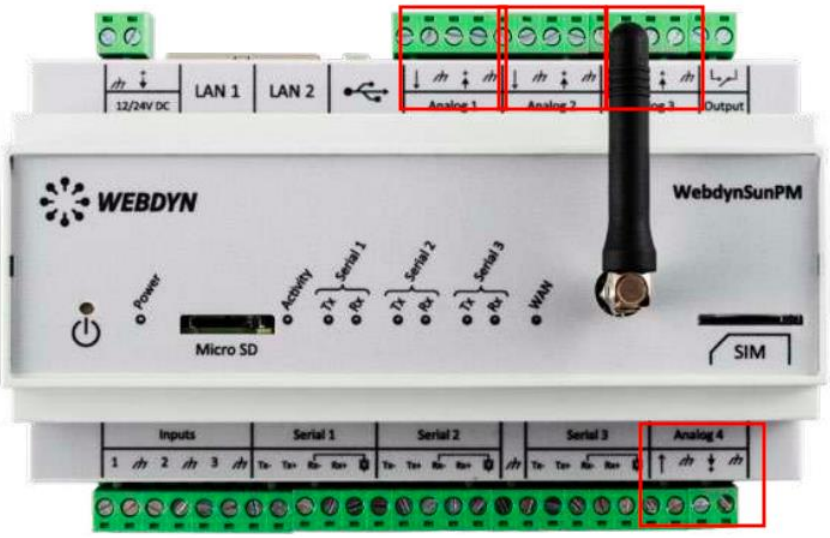
2. Discrete and Pulse Inputs

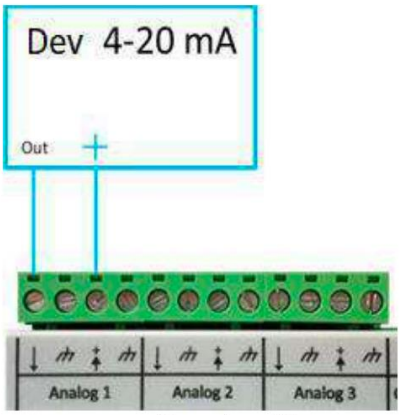
The WebdynSunPM hub has three inputs which can be configured in discrete or pulse mode (pulse counting). These inputs are located at the bottom left of the WebdynSunPM logger.



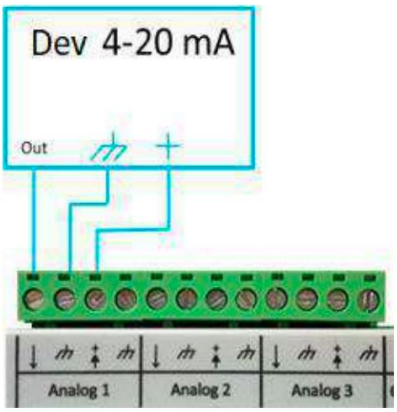
3. Analog Inputs :

The WebdynSunPM concentrator has four analog inputs for a current ranging from 4 to 20 mA or a voltage ranging from 0 to 10 V.





Two-wire cabling



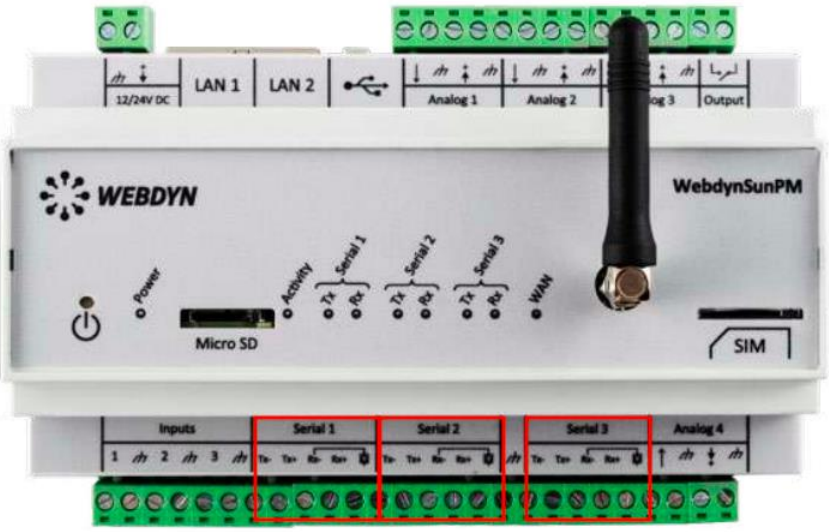
Three-wire cabling

4. RS 485/422 Serial Ports

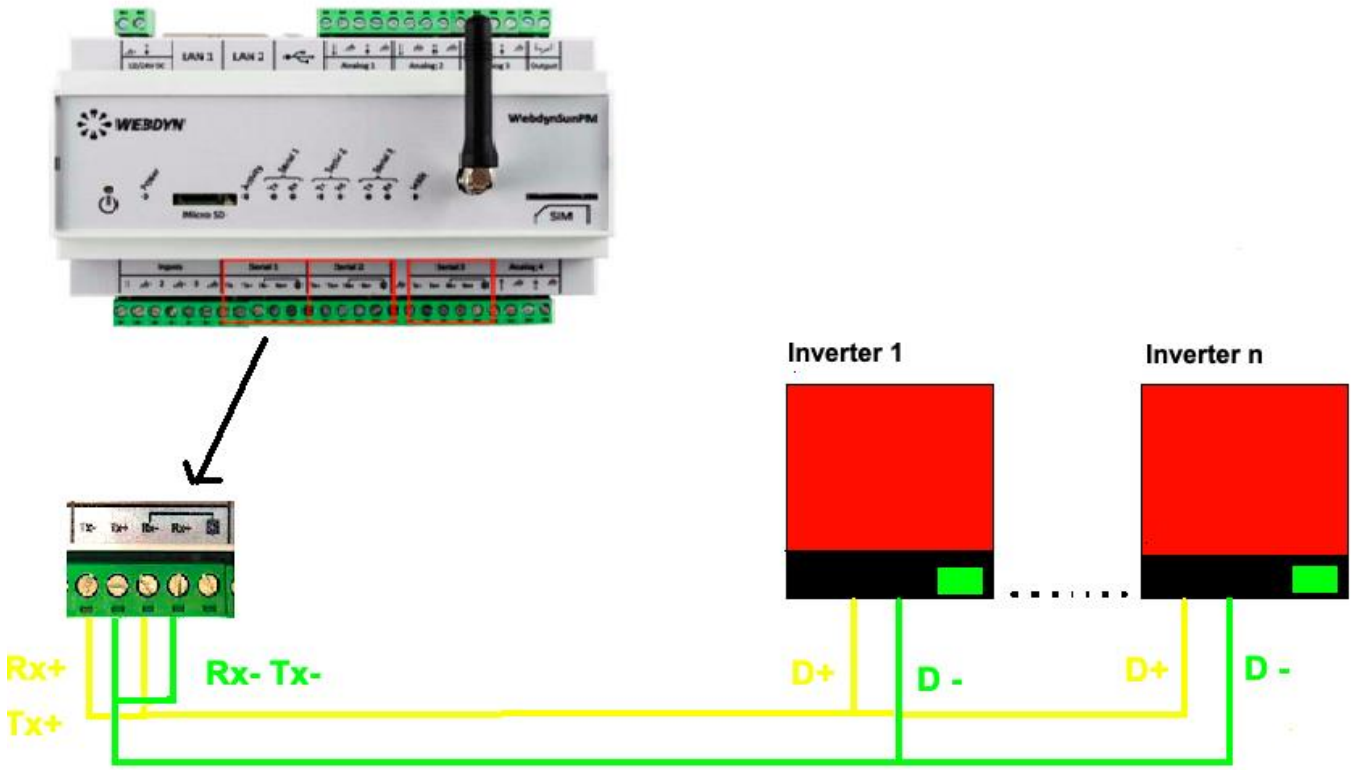
The WebdynSunPM logger has three RS485/422 serial ports.

A communication protocol can be associated with each of these ports.

All devices on the same serial port must use the same protocol and the same bus parameters (speed, data bits, stop bits, parity).



Wiring can be made according to the diagrams as mentioned on next page.



Slave Connections & Settings

Now connect required Inverters and meters to device Modbus. Following link with guide you on how to connect:

For **Inverter/Meter** Connections and Settings, please refer to '*Installation Manual – [Inv Brand]'* on:	https://trackso.in/trackso-installation-manuals/

For **physical installation and mounting of sensors**, please refer to '*Datasheet & Installation Guide – [sensor name]'* on:	https://trackso.in/datasheets/

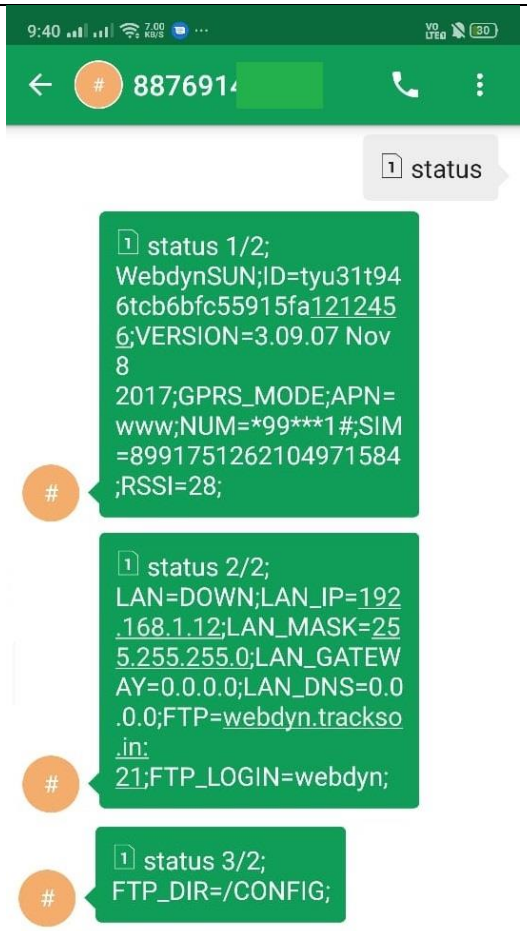
Debugging via SMS

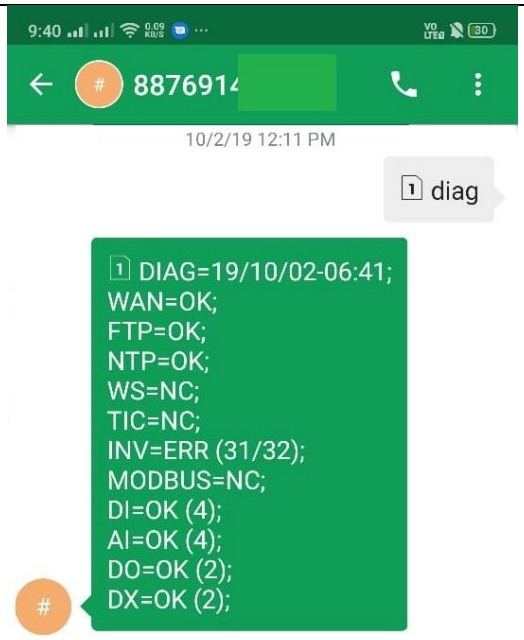
If your data logger is not able to send data to the portal or the unit is showing status as

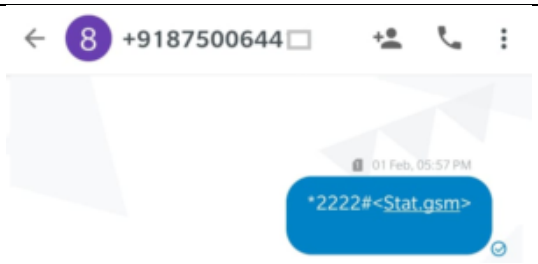
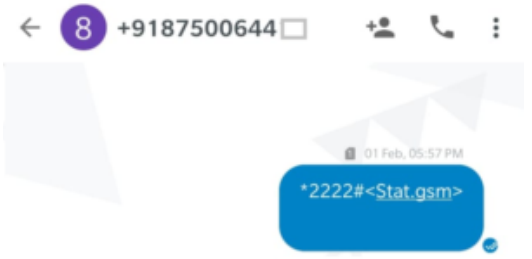
OFF <timestamp> on the platform, please send the following SMS's to the phone number of the SIM card inserted in the Data Logger and identify the reason for the OFF status accordingly:

SMS command	Use Case	Response
status	Requests information on the current configuration of the unit:	• Unit type: WebdynModBus • Unit identifier (prefixID) • Software version • Connection mode (GPRS or LAN) • Information on the APN configured • SIM card identifier • GSM signal strength (RSSI) • Information on the Ethernet interface (IP, router, DNS, etc.) • Information on the remote FTP server
diag	Requests diagnostics on the unit interfaces:	• WAN: status of the WAN connection (OK or ERR) • FTP: status of the connection to the FTP server (OK or ERR) • NTP: NTP synchronization status (OK or ERR) • WS: status of Web Services (OK or ERR) • MODBUS: status of the Modbus link (OK or ERR)

Sample SMS Commands





SMS Status	SMS Screenshot	Possible Issue & Solution
SMS NOT delivered		**Possible device status:** 1. Not Powered ON 2. SIM card with the given phone number Is not present in the data logger **Possible solution:** 1. Check Power Supply 2. Check if Sim card is properly inserted or if it is blocked by the service provider
SMS delivered but no response		**Possible device status:** 1. Powered ON but main balance/internet network not available **Possible solution** 1. Recharge account with a. minimum INR 10 main balance b. basic 2G/3G/4G internet data plan

Detailed Manuals

Note: Detailed Installation manual is available at the Manufacturers website. Link-
http://www.webdyn.com/wp-content/uploads/2015/10/WebdynSun/Webdyn Modbus_MI_UK.pdf?3912a7

We have tried to extract basic information for your use to help you bring your system online without support.

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