

Applications

- **Inverter Monitoring**  
Inspect generation and efficiency of grid-tie and hybrid inverters.
- **AC/DC Power Monitoring**  
Supervise load and performance of substations and mini-grids, and monitor battery voltage natively.
- **Weather Station Monitoring**  
Observe irradiation, temperature and other atmospheric conditions.
- **Zero Feed-In & DG Protection**  
Reduce active output power of multiple inverters to regulate energy generation.
- **Remote Control**  
Remotely control the inverters generation.



Specifications- PowerAMR Watt Mini 3

Inputs & Outputs	<ul style="list-style-type: none"> <li>• One Analog Input (6-60V DC) on Supply Voltage</li> </ul>	
Power	<ul style="list-style-type: none"> <li>• Input voltage range: 6-60V DC</li> <li>• High Efficiency DC-DC converter</li> <li>• Low Power Consumption of &lt; 2 Watts</li> </ul>	
Communication	<ul style="list-style-type: none"> <li>• RS-485 Modbus RTU port for communication with up to 15 Slaves</li> <li>• Modbus TCP Client mode for communication with up to 10 Servers</li> <li>• Modbus TCP Server mode to interface with SCADA systems</li> </ul>	
Network	<ul style="list-style-type: none"> <li>• 100 Mbit Ethernet</li> <li>• 4G LTE ( Nano Sim)</li> </ul>	
Storage	<ul style="list-style-type: none"> <li>• 512 KB RAM</li> <li>• 16 GB MicroSD Card</li> </ul>	
Data Collection & Export	<ul style="list-style-type: none"> <li>• CSV format</li> <li>• HTTP / HTTPS / FTP / SFTP / MQTT / MQTTS</li> </ul>	
Characteristics	Enclosure Material	Polyamide, UL 94 V0
	Enclosure Colour	Light Grey, similar to RAL 7035
	Degree of Protection	IP20 (Finger Protected)
	Operating Temperature	0-60 °C
	DIN Standard Mount	DIN EN 60529
	Dimensions (L x W x H)	105 x 23 x 115 mm
	Weight	160 g

## Introduction

The system can be used for monitoring Grid-Tie, Hybrid and Off- Grid setups, Solar Water Pumping, Building Loads, and features a Zero Feed-In and DG Protection solution that is compatible with leading manufacturers.

The PowerAMR Watt Mini is a Modbus Master (Client in Modbus TCP) that can interface with up to 8 RTU Slaves and 8 TCP Servers. It may also be configured as a Modbus TCP Server to interface with a SCADA system.

It supports the following data types:

- IEEE754 Float (Big and Little Endian), INT32 (Big and Little Endian), UINT32 (Big and Little Endian), INT16

## Benefits

- Versatile**

Configurable using the built in functions

- Industry Compliant**

Integrate new and existing devices over Modbus RTU/TCP with the on-board device driver creator

- Local Storage**

Securely store several years worth of data locally in CSV format and control who can view it

- Programmable**

Write scripts in the built-in editor using the uPHP language or the Visual Script Builder

## Zero Feed-In & DG Protection

The Power Control Solution can throttle the active power output of inverters on sites with no Net Metering or with Diesel Generators, securing against grid export or reverse-feeding. The supported brands are :

- |                                   |  |
|-----------------------------------|--|
| <input type="checkbox"/> ABB      | <input type="checkbox"/> Polycab       |
| <input type="checkbox"/> Delta    | <input type="checkbox"/> Refusol       |
| <input type="checkbox"/> Emerson  | <input type="checkbox"/> SofarSolar    |
| <input type="checkbox"/> Fronius  | <input type="checkbox"/> Schneider     |
| <input type="checkbox"/> Goodwe   | <input type="checkbox"/> SMA           |
| <input type="checkbox"/> Growatt  | <input type="checkbox"/> SolarEdge     |
| <input type="checkbox"/> Huawei   | <input type="checkbox"/> Solis Ginlong |
| <input type="checkbox"/> Ingeteam | <input type="checkbox"/> Sungrow       |
| <input type="checkbox"/> Kaco     | <input type="checkbox"/> Zegersolar    |
| <input type="checkbox"/> Kstar    | <input type="checkbox"/> and more...   |

## Energy Monitoring Solution (EMS)

The MINI3 is capable of storing several years worth of data on the MicroSD card. It can also upload the logged data to the Energy Monitoring Solution (EMS), a highly customizable cloud portal that displays real-time data in the form of graphs and widgets, allowing users to select the parameters they wish to monitor, and create separate accounts for individual clients.