webdyn
flexitron group

Appendix

SOLARMAX-WebdynSunPM

Index

SOLARMAX

1. Supported devices

Solarmax devices are compatible with the following protocols implemented in the WebDynSunPM:

Inverter protocol	Physical interface	Specifications
SOLARMAX	RS485 2 wires	100 max

On the same RS485 physical interface, the connected devices must have the same protocol and the same serial configuration.

The maximum number of supported devices may be influenced by the number of variables to be communicated.

The Solarmax communication protocols are only in RTU mode (RS485). The devices with the Solarmax protocol managed by the WebdynSunPM are split into 11 categories as follows:

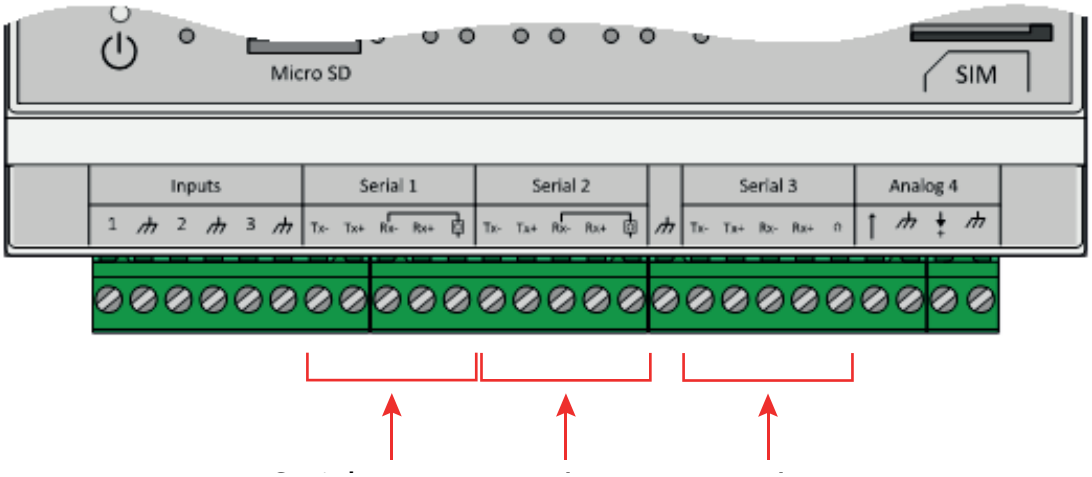
Categories	Supported devices
Generic	SolarMax 5TP2 SolarMax 6TP2 SolarMax 7TP2 SolarMax 25HT4 SolarMax 25HT2 SolarMax 20HT4 SolarMax 20HT2 SolarMax 30SHT SolarMax 28SHT SolarMax 25SHT SolarMax 22SHT SolarMax 20SHT SolarMax 17SHT SolarMax 15SMT SolarMax 13SMT SolarMax 10SMT SolarMax 8SMT SolarMax 6SMT SolarMax 6000P SolarMax 5000P SolarMax 4600P SolarMax 4000P SolarMax 3600P SolarMax 3000P SolarMax 2500P SolarMax 2000P SolarMax 1500P SolarMax 1000P

Categories	Supported devices
String inverter type 1	SolarMax 2000C SolarMax 3000C SolarMax 4000C SolarMax 4200C SolarMax 6000C SolarMax 2000S SolarMax 3000S SolarMax 4200S SolarMax 6000S
String inverter type 2	SolarMax 6MT2 CH SolarMax 12MT2 A SolarMax 15MT3 A SolarMax 18MT3 A SolarMax 10MT SolarMax 13MT3 13MT SolarMax 15MT3 15MT SolarMax 10MT2 SolarMax 13MT2 SolarMax 15MT2 SolarMax 6MT2 SolarMax 8MT2
String inverter type 3	SolarMax 2000P SolarMax 3000P
String inverter type 4	SolarMax 4000P SolarMax 4600P SolarMax 5000P
String inverter type 5	SolarMax 4TP1
String inverter type 6	SolarMax 30HT4 SolarMax 32HT4 SolarMax 32HT2
Central inverter type 1	SolarMax 20C SolarMax 25C SolarMax 30C SolarMax 35C SolarMax 50C SolarMax 80C SolarMax 100C SolarMax 300C SolarMax 330C-SV SolarMax 20S SolarMax 35S

Categories	Supported devices
Central inverter type 2	SolarMax 50TS SolarMax 75TS A SolarMax 80TS SolarMax 100TS SolarMax 300TS ST SolarMax 300TS MT SolarMax 330TS-SV ST SolarMax 330TS-SV MT SolarMax 660TS-SV ST SolarMax 660TS-SV MT SolarMax 990TS-SV ST SolarMax 990TS-SV MT SolarMax 1320TS-SV ST SolarMax 1320TS-SV MT SolarMax 360TS-SV ST SolarMax 360TS-SV MT SolarMax 720TS-SV ST SolarMax 720TS-SV MT SolarMax 1080TS-SV ST SolarMax 1080TS-SV MT SolarMax 1440TS-SV ST SolarMax 1440TS-SV MT SolarMax 500RX Outdoor SolarMax 600RX Outdoor SolarMax 533RX Outdoor
MaxCount	MaxCount
MaxMeteo	MaxMeteo

2. Solarmax gateway connection using an RS485 communication bus

The Solarmax devices are connected to one of the three WebdynSunPM RS485 communication buses. The gateway can be at the end of the RS485 communication bus or in the middle.



All wiring work must be carried out by a specialised qualified electrician. Before installation, all devices connected to the corresponding communication bus must be disconnected on both sides (DC and AC). Please follow all the safety instructions featured in the device documentation.

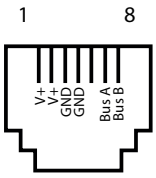
2.1 Wiring "Solarmax devices using 2-wire RS485 (Half-Duplex)":

The total RS485 connection length must be less than 300 metres. If you need to increase the length, a Solarmax MaxComm amplifier will need to be used. The installation of terminating resistances at the RS485 network start and end point is not recommended by Solarmax.

Some Solarmax devices need an external +15VDC power supply such as:

- Series C inverters
- MaxConnectPlus with MCP-DSP and MCP-LEM
- MaxVisio
- MaxMeteo
- MaxCount

The RS485 bus is connected using an RJ45 connector with the following pin assignments:



Pin	Function
1	V+ (network power supply input)
2	V+ (network power supply input)
3	GND (network power supply)
4	GND (network power supply)
5	-
6	-
7	A (RS485)
8	B (RS485)

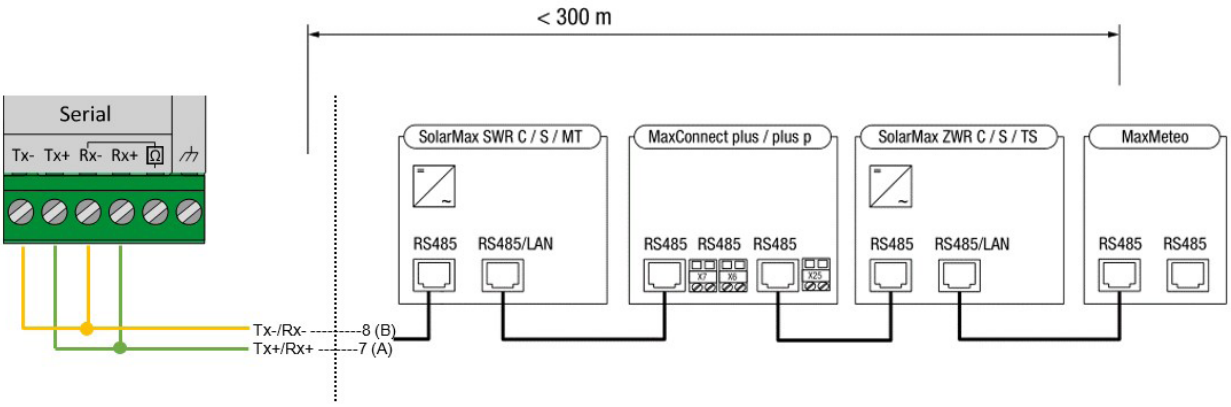
Depending on the device model, the RJ45 plug can be used either as an RS485 interface or as an Ethernet interface. The communication is in the “Settings” menu of the graphic display. Please refer to the documentation for the Solarmax device to be connected.

Below is an explanation of the different wiring depending on the possible types:

2.1.1 Daisy-Chain or Bus wiring:

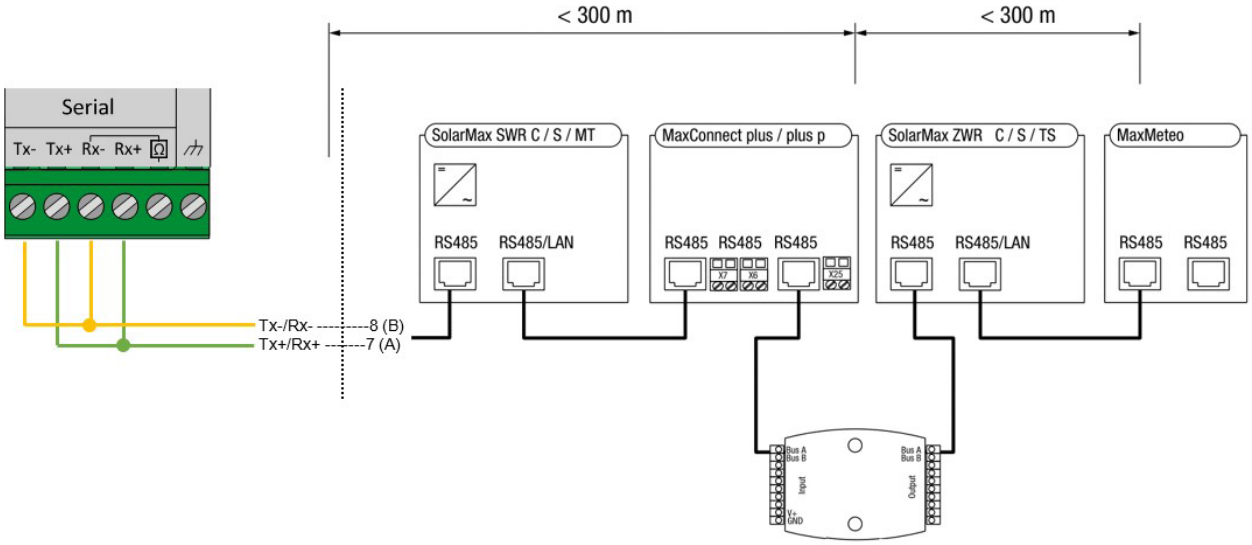
Daisy Chain network up to a length of 300 metres.

Wiring example:



It is possible for large photovoltaic power stations to have a Daisy Chain network longer than 300 metres. In that case, you need to divide the network into several sections and place a MaxComm bus repeater as an intermediate amplifier.

Wiring example:

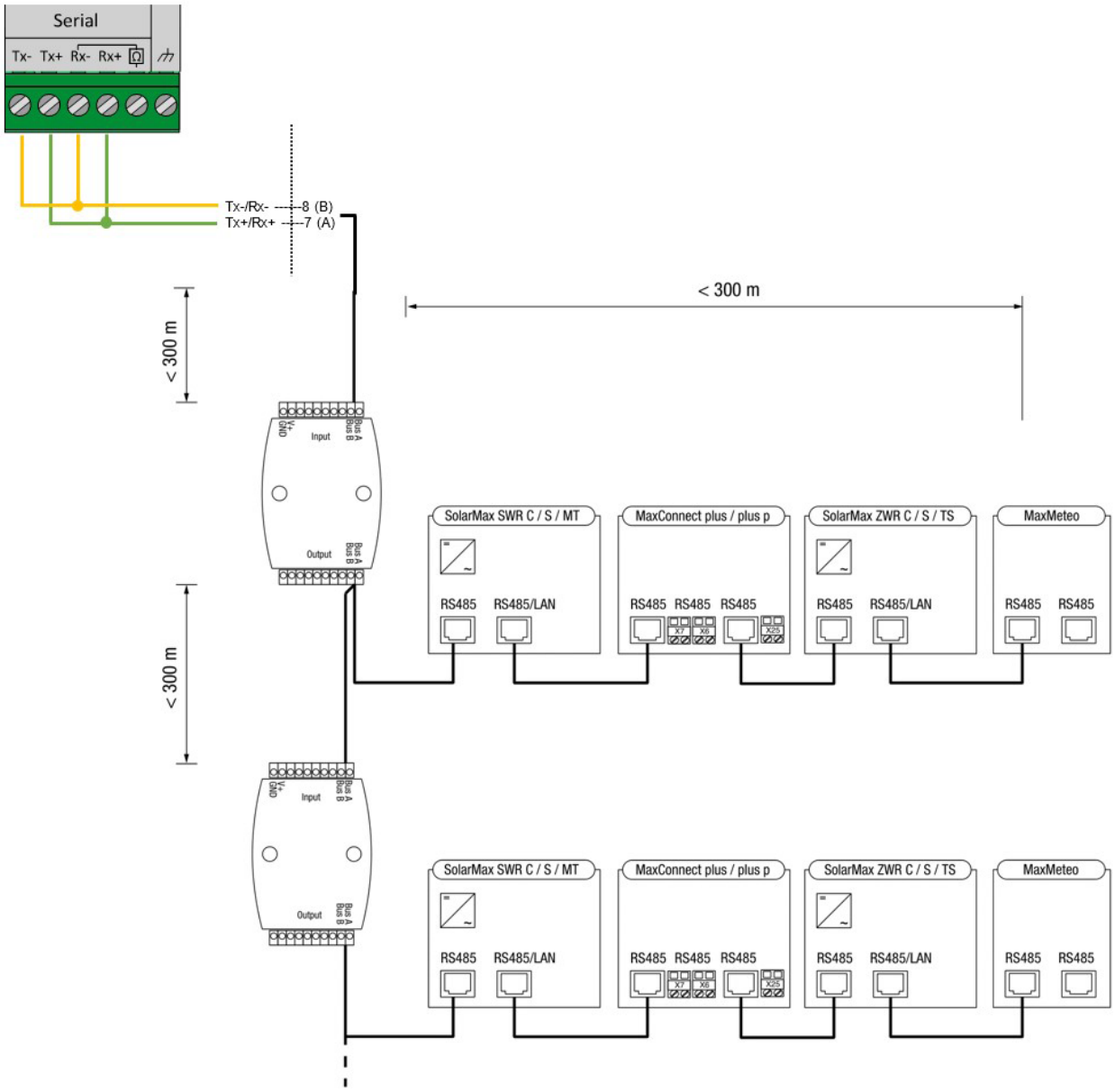


2.1.2 Segmentation:

The segments are network sections that come off a main branch. In some photovoltaic installations, this may become necessary when the use of a conventional Daisy Chain network would lead to a proportionally too heavy load.

Another strategy for this network structure is in the electric separation of the different segments. If there is a disorder in one segment, the others remain operational.

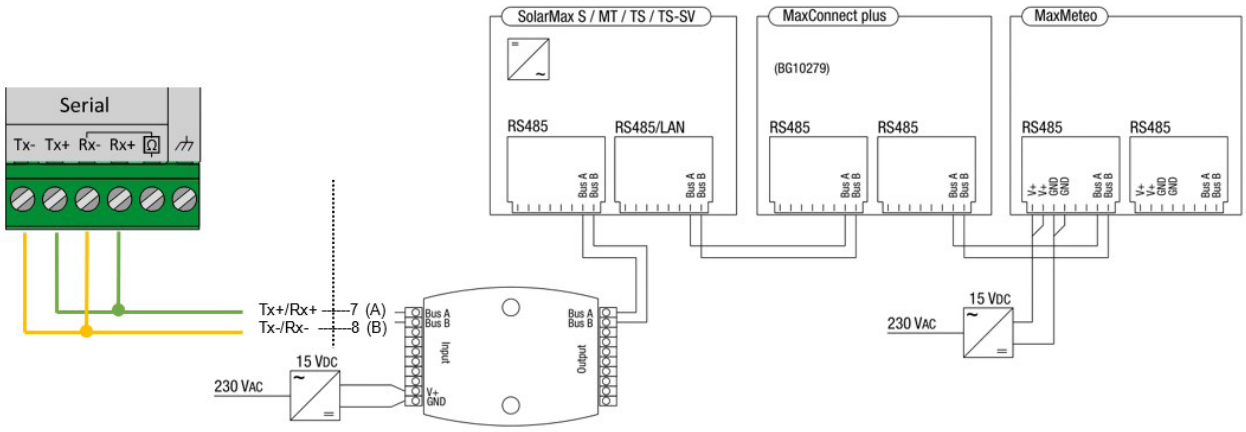
Wiring example:



External power supply:

It is recommended to supply every device that requires an external +15VDC power supply using a specific external power supply, thereby making it possible to longer longer be subjecd to the bus length.

Wiring example:



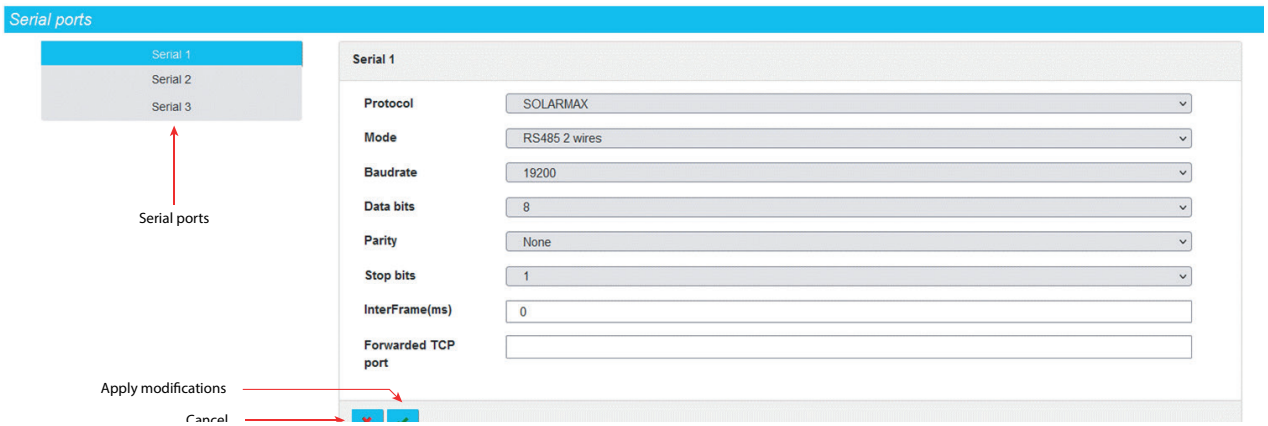
3. Serial port configuration

It is essential to configure the Solarmax device serial port (refer to the Solarmax manual).

Check that the serial identifier is different on all the connected devices on the site.

The serial port can be configured using the WebdynSunPM web interface using the "Settings" tab.

The “serial” part is used to configure 3 RS485/422 serial ports which each have their own settings and output.



The possible parameters for Solarmax devices for each serial port are:

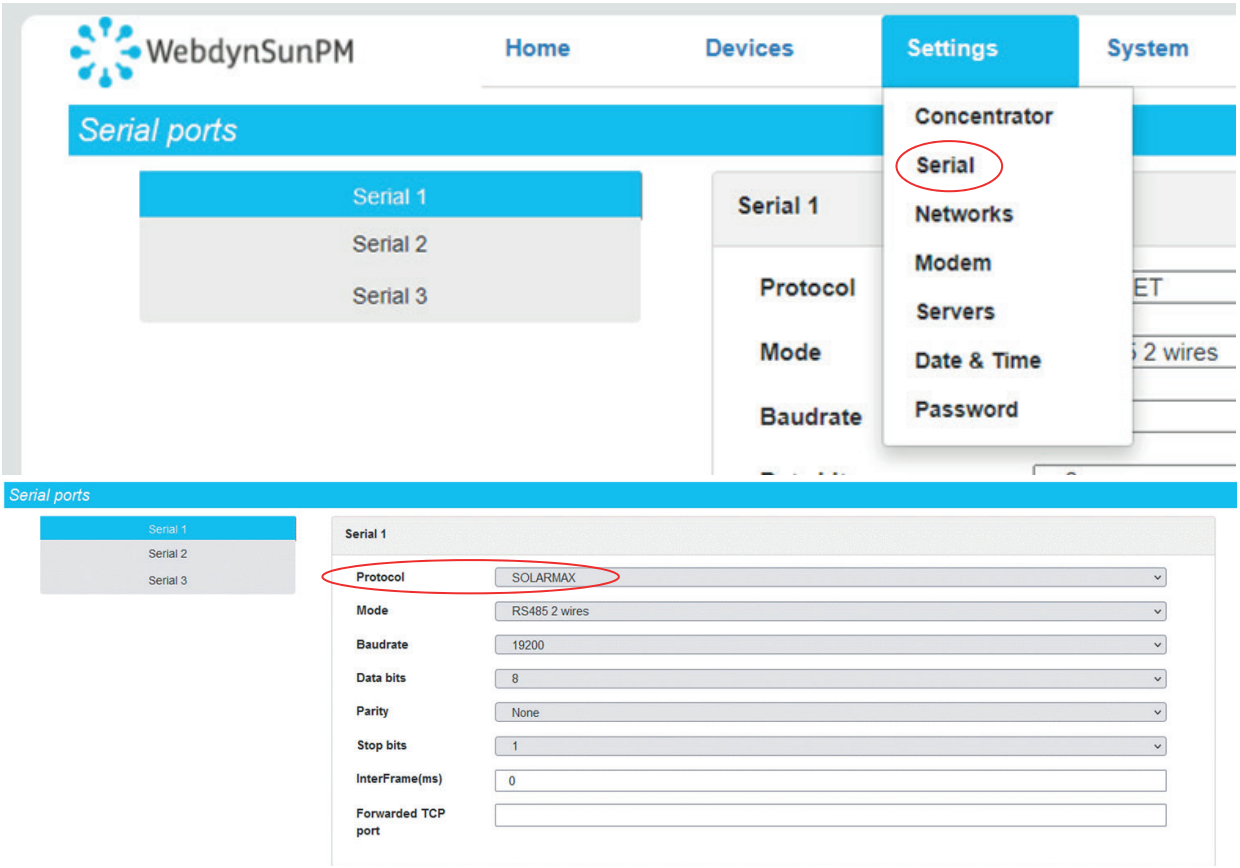
Web interface	Parameter in the <uid>_daq.csv configuration file	Description
Protocol	protocol	The protocol type for the serial interface: • **SOLARMAX**: serial port configured as Solarmax
Mode	wires	Serial interface mode: • **RS485 2 wires**: Half-Duplex (2 wires) RS485 serial connection
Baudrate	baudrate	Serial connection speed in bauds: • **19200**
Data bits	data_bits	Number of data bits: • **8**
Parity	parity	Serial connection parity: • **None** : no parity
Stop bits	stop_bits	Number of stop bits: • **1**
InterFrame	interframe	Waiting time between 2 frames exchanged on the serial port. This time is expressed in ms. See the explanation in the WebdynSunPM user manual. **0: (recommended value)**
Forwarded TCP port	forwarded_port	Forwarded TCP port. If there is a value in this field, the concentrator opens a modbusTCP port on the entered port number. When modbusTCP devices connect to this port, all sent requests are directly forwarded to the modbusRTU bus and the response is returned to the connected device using this modbusTCP port. This option is used to create a communication tunnel between modbusTCP devices and the local modbusRTU network. The requests are slotted between the concentrator's internal monitoring requests. **Leave the field blank. (recommended value)**

This configuration can be accessed remotely in the "<uid>_daq.csv" file stored in the CONFIG directory of the remote server. (see WebdynSunPM user manual).

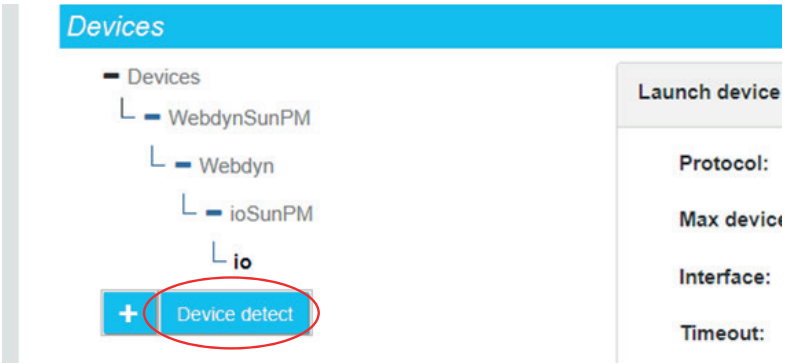
4. Automatic Solarmax device detection

The automatic detection of a Solarmax device requires the following steps:

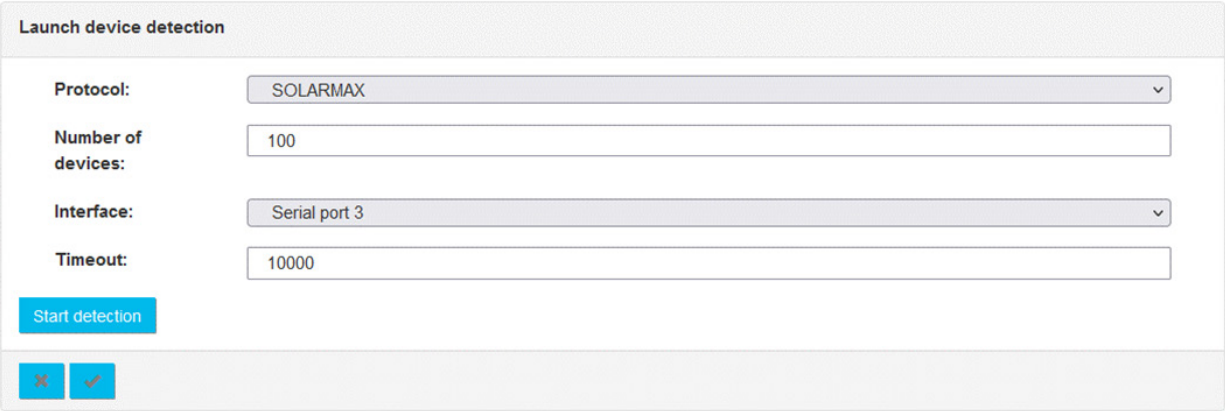
- Connect the device to the concentrator using a serial connection configured as explained below.
- Configure the serial connection on the configuration page indicating the required communication speed and the protocol type. Indicate “SOLARMAX”:



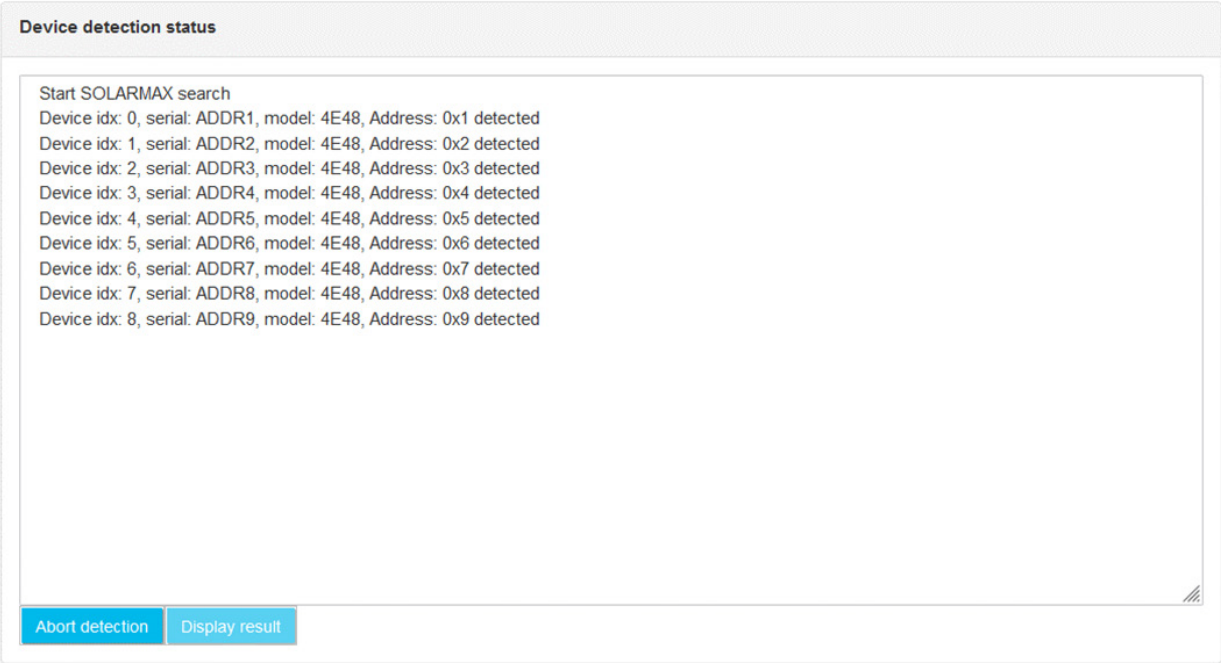
- Go to the device page and click the “Device detect” button:



- The detection page is displayed:



  - Select the SOLARMAX protocol from the drop-down list on the first “Protocol” field.
  - Enter the number of devices to detect in the “Number of devices” field. The default value is “100”.
  - Select the serial port configured in the “Interface” field. For the serial connection to be selectable, it must first be configured by going to the "Settings" tab, then "Serial" and selecting the "SOLARMAX" protocol.
  - The timeout indicates the Solarmax device response time. By default it is set to 10000 ms.
- Next click the “Start detection” button to launch the detection. The progress window below is displayed:



As detection progresses it is displayed on the web page:

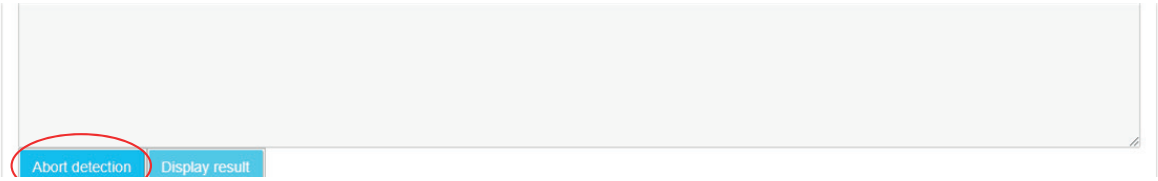
- “Start SOLARMAX search” means the Solarmax scan has begun.
- As the detection progresses, the screen displays the detected devices with their index, serial number, model and address on the bus:

```
Device idx: 0, serial: ADDR1, model: 4E48, Address: 0x1 detected
```

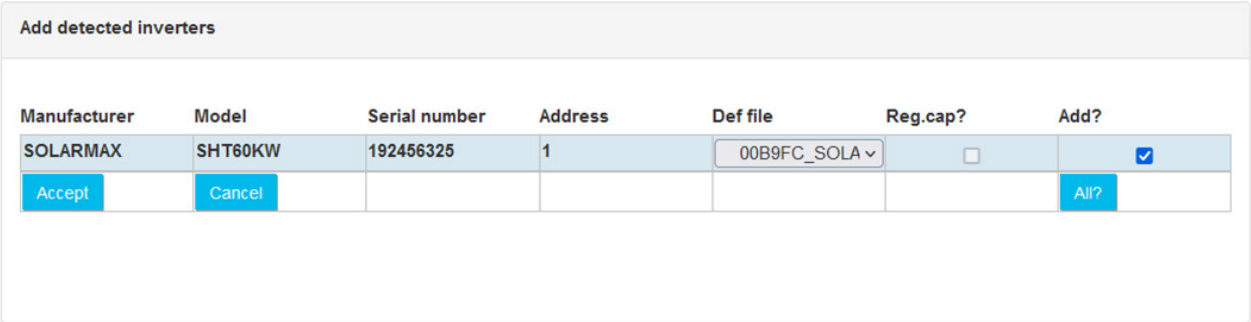
- On completion of the detection, the page displays the number of detected devices:

```
found 10 devices
Search SOLARMAX finished
```

- It is always possible to interrupt detection by clicking the “Abort detection” button:



- On completion of the Solarmax scan, the next page is displayed to view all the detected devices and, eventually, add them to the configuration:

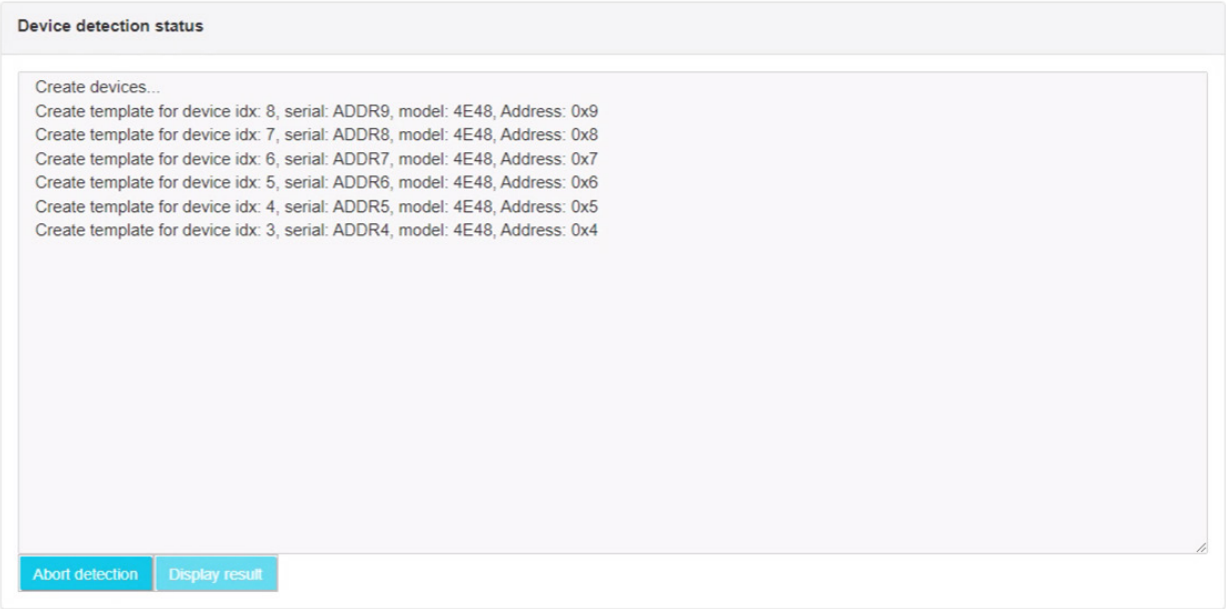


This screen therefore displays all the detected devices, as well as a certain number of data read from the Solarmax device tables (model, serial number, address, manufacturer)

There is also a checkbox at the right to select the devices to add to the configuration. Note that if the detected device is already part of the configuration, the checkbox is not checked by default. Otherwise the checkbox is checked for automatic addition.

Once the devices have been selected, clicking the “Accept” button imports the new configuration to the concentrator and the device appears in the configured devices.

- When the user clicks the “Accept” button, the device import starts by reading the different frames to completely create the devices. The import progress is displayed in the import window:



Note that if the device already existed in the configuration and the user forces a new import, the previous device is not overwritten. A new device is created in addition to the pre-existing device.

Automatic detection is used to create the definition files needed for the devices to run. These files are stored in and accessible in the DEF directory on the remote server. (see WebdynSunPM user manual)

5. Solarmax definition file

The Solarmax protocol file names are composed as follows:

<uid>_SOLARMAX_Inverter_SOLARMAX_<Model>.csv

Where:

- <uid>: Concentrator identifier
- < Model>: is generated automatically from the “Model” information.

Definition file content:

Field	Description
Info1	PORT: Port number used to query the device. See the device Solarmax documentation.
Info2	KEY: Identifier for the variable to be collected on the device. See the device Solarmax documentation.
Info3	Type of the variable to be collected. The authorised formats are the following: • U8: unsigned integer on 8 bits (1 byte) • U16: unsigned integer on 16 bits (2 bytes, or 1 register) • U32: unsigned integer on 32 bits (4 bytes, or 2 registers)
Info4	Not used

Example of a definition file for a “generic” category Solarmax device:

```
SOLARMAX;Inverter;SOLARMAX;model
1;100;ADR;U8;;Network address;;1.000000;0.000000;;1
2;100;TYP;U16;;Type;;1.000000;0.000000;;1
3;100;PAC;U32;;AC ouput;;0.500000;0.000000;W;4
4;100;KHR;U32;;Operating hours;;1.000000;0.000000;;4
5;100;KYR;U32;;Energy year;;1.000000;0.000000;kWh;4
6;100;KMT;U32;;Energy month;;1.000000;0.000000;kWh;4
7;100;KDY;U32;;Energy day;;0.100000;0.000000;kWh;4
8;100;KT0;U32;;Energy total;;1.000000;0.000000;kWh;4
9;100;PIN;U32;;Installed capacity;;0.500000;0.000000;W;4
10;100;PRL;U8;;Relative output;;1.000000;0.000000;%;4
11;100;TKK;U16;;Temperature power unit 1;;1.000000;0.000000;°C;4
12;100;SYS;U32;;Status code;;1.000000;0.000000;;8
13;200;DPR;U32;;Desired power relative;;1.000000; 0.000000;ppm;17
14;200;DPH;U32;;Desired phi;;1.000000;-3141592.000000;µrad;17
15;200;DQR;U32;;Desired Q relative;;1.000000;-1000000.000000;sppm;17
16;200;RCA;U8;;Remote control action;;1.000000;0.000000;;17
17;200;PLR;U8;;Active power limitation;cmdPwrPercent;1.000000;0.000000;%;17
```

Example of a definition file for a “String inverter type 1” category Solarmax device:

```
SOLARMAX;Inverter;SOLARMAX;model
1;100;ADR;U8;;Network address;;1.000000;0.000000;;1
2;100;TYP;U16;;Type;;1.000000;0.000000;;1
3;100;PAC;U32;;AC ouput;;0.500000;0.000000;W;4
4;100;KHR;U32;;Operating hours;;1.000000;0.000000;;4
5;100;KYR;U32;;Energy year;;1.000000;0.000000;kWh;4
6;100;KMT;U32;;Energy month;;1.000000;0.000000;kWh;4
7;100;KDY;U32;;Energy day;;0.100000;0.000000;kWh;4
8;100;KT0;U32;;Energy total;;1.000000;0.000000;kWh;4
9;100;PIN;U32;;Installed capacity;;0.500000;0.000000;W;4
10;100;PRL;U8;;Relative output;;1.000000;0.000000;%;4
11;100;UDC;U16;;Voltage DC;;0.100000;0.000000;V;4
12;100;UL1;U16;;Voltage phase 1;;0.100000;0.000000;V;4
13;100;IDC;U16;;Current DC;;0.010000;0.000000;A;4
14;100;IL1;U16;;Current phase 1;;0.010000;0.000000;A;4
15;100;TKK;U16;;Temperature power unit 1;;1.000000;0.000000;°C;4
16;100;SYS;U32;;Status code;;1.000000;0.000000;;8
17;200;PLR;U8;;Active power limitation;cmdPwrPercent;1.000000;0.000000;%;17
```

Example of a definition file for a “String inverter type 2” category Solarmax device:

```
SOLARMAX;Inverter;SOLARMAX;model
1;100;ADR;U8;;Network address;;1.000000;0.000000;;1
2;100;TYP;U16;;Type;;1.000000;0.000000;;1
3;100;PAC;U32;;AC ouput;;0.500000;0.000000;W;4
4;100;KHR;U32;;Operating hours;;1.000000;0.000000;;4
5;100;KYR;U32;;Energy year;;1.000000;0.000000;kWh;4
6;100;KMT;U32;;Energy month;;1.000000;0.000000;kWh;4
7;100;KDY;U32;;Energy day;;0.100000;0.000000;kWh;4
8;100;KT0;U32;;Energy total;;1.000000;0.000000;kWh;4
9;100;PIN;U32;;Installed capacity;;0.500000;0.000000;W;4
10;100;PRL;U8;;Relative output;;1.000000;0.000000;%;4
11;100;UD01;U16;;Voltage DC tracker 1;;0.100000;0.000000;V;4
12;100;UD02;U16;;Voltage DC tracker 2;;0.100000;0.000000;V;4
13;100;UD03;U16;;Voltage DC tracker 3;;0.100000;0.000000;V;4
14;100;UL1;U16;;Voltage phase 1;;0.100000;0.000000;V;4
15;100;UL2;U16;;Voltage phase 2;;0.100000;0.000000;V;4
16;100;UL3;U16;;Voltage phase 3;;0.100000;0.000000;V;4
17;100;ID01;U16;;Current DC tracker 1;;0.010000;0.000000;A;4
18;100;ID02;U16;;Current DC tracker 2;;0.010000;0.000000;A;4
19;100;ID03;U16;;Current DC tracker 3;;0.010000;0.000000;A;4
20;100;IL1;U16;;Current phase 1;;0.010000;0.000000;A;4
21;100;IL2;U16;;Current phase 2;;0.010000;0.000000;A;4
22;100;IL3;U16;;Current phase 3;;0.010000;0.000000;A;4
23;100;TKK;U16;;Temperature power unit 1;;1.000000;0.000000;°C;4
24;100;SYS;U32;;Status code;;1.000000;0.000000;;8
25;200;DPR;U32;;Desired power relative;;1.000000;0.000000;ppm;17
26;200;DPH;U32;;Desired phi;;1.000000;-3141592.000000;µrad;17
27;200;DQR;U32;;Desired Q relative;;1.000000;-1000000.000000;sppm;17
28;200;RCA;U8;;Remote control action;;1.000000;0.000000;;17
29;200;PLR;U8;;Active power limitation;cmdPwrPercent;1.000000;0.000000;%;17
```

Example of a definition file for a “String inverter type 3” category Solarmax device:

```
SOLARMAX;Inverter;SOLARMAX;model
1;100;ADR;U8;;Network address;;1.000000;0.000000;;1
2;100;TYP;U16;;Type;;1.000000;0.000000;;1
3;100;PAC;U32;;AC ouput;;0.500000;0.000000;W;4
4;100;KHR;U32;;Operating hours;;1.000000;0.000000;;4
5;100;KYR;U32;;Energy year;;1.000000;0.000000;kWh;4
6;100;KMT;U32;;Energy month;;1.000000;0.000000;kWh;4
7;100;KDY;U32;;Energy day;;0.100000;0.000000;kWh;4
8;100;KT0;U32;;Energy total;;1.000000;0.000000;kWh;4
9;100;UDC;U16;;Voltage DC;;0.100000;0;V;4
10;100;UAC;U16;;Voltage AC;;0.100000;0.000000;V;4
11;100;IDC;U16;;Current DC;;0.0100000;0.000000;A;4
12;100;IAC;U16;;Current AC;;0.0100000;0.000000;A;4
13;100;TKK;U16;;Temperature power unit 1;;1.000000;0.000000;°C;4
14;100;SYS;U32;;Status code;;1.000000;0.000000;;8
15;200;PLR;U8;;Active power limitation;;1.000000;0.000000;%;17
```

Example of a definition file for a “String inverter type 4” category Solarmax device:

```
SOLARMAX;Inverter;SOLARMAX;model
1;100;ADR;U8;;Network address;;1.000000;0.000000;;1
2;100;TYP;U16;;Type;;1.000000;0.000000;;1
3;100;PAC;U32;;AC ouput;;0.500000;0.000000;W;4
4;100;KHR;U32;;Operating hours;;1.000000;0.000000;;4
5;100;KYR;U32;;Energy year;;1.000000;0.000000;kWh;4
6;100;KMT;U32;;Energy month;;1.000000;0.000000;kWh;4
7;100;KDY;U32;;Energy day;;0.100000;0.000000;kWh;4
8;100;KT0;U32;;Energy total;;1.000000;0.000000;kWh;4
9;100;UD01;U16;;Voltage DC tracker 1;;0.100000;0.000000;V;4
10;100;UD02;U16;;Voltage DC tracker 2;;0.100000;0.000000;V;4
11;100;UAC;U16;;Voltage AC;;0.100000;0.000000;V;4
12;100;ID01;U16;;Current DC tracker 1;;0.010000;0.000000;A;4
13;100;ID02;U16;;Current DC tracker 2;;0.010000;0.000000;A;4
14;100;IAC;U16;;Current AC;;0.0100000;0.000000;A;4
15;100;TKK;U16;;Temperature power unit 1;;1.000000;0.000000;°C;4
16;100;SYS;U32;;Status code;;1.000000;0.000000;;8
17;200;PLR;U8;;Active power limitation;cmdPwrPercent;1.000000;0.000000;%;17
```

Example of a definition file for a “String inverter type 5” category Solarmax device:

```
SOLARMAX;Inverter;SOLARMAX;model
1;100;ADR;U8;;Network address;;1.000000;0.000000;;1
2;100;TYP;U16;;Type;;1.000000;0.000000;;1
3;100;PAC;U32;;AC ouput;;0.500000;0.000000;W;4
4;100;KHR;U32;;Operating hours;;1.000000;0.000000;;4
5;100;KYR;U32;;Energy year;;1.000000;0.000000;kWh;4
6;100;KMT;U32;;Energy month;;1.000000;0.000000;kWh;4
7;100;KDY;U32;;Energy day;;0.100000;0.000000;kWh;4
8;100;KT0;U32;;Energy total;;1.000000;0.000000;kWh;4
9;100;UDC;U16;;Voltage DC;;0.100000;0.000000;V;4
10;100;UL1;U16;;Voltage phase 1;;0.100000;0.000000;V;4
11;100;UL2;U16;;Voltage phase 2;;0.100000;0.000000;V;4
12;100;UL3;U16;;Voltage phase 3;;0.100000;0.000000;V;4
13;100;IDC;U16;;Current DC;;0.0100000;0.000000;A;4
14;100;IL1;U16;;Current phase 1;;0.010000;0.000000;A;4
15;100;IL2;U16;;Current phase 2;;0.010000;0.000000;A;4
16;100;IL3;U16;;Current phase 3;;0.010000;0.000000;A;4
17;100;TKK;U16;;Temperature power unit 1;;1.000000;0.000000;°C;4
18;100;SYS;U32;;Status code;;1.000000;0.000000;;8
19;200;PLR;U8;;Active power limitation;cmdPwrPercent;1.000000;0.000000;%;17
```

Example of a definition file for a “String inverter type 6” category Solarmax device:

```
SOLARMAX;Inverter;SOLARMAX;model
1;100;ADR;U8;;Network address;;1.000000;0.000000;;1
2;100;TYP;U16;;Type;;1.000000;0.000000;;1
3;100;PAC;U32;;AC ouput;;0.500000;0.000000;W;4
4;100;KHR;U32;;Operating hours;;1.000000;0.000000;;4
5;100;KYR;U32;;Energy year;;1.000000;0.000000;kWh;4
6;100;KMT;U32;;Energy month;;1.000000;0.000000;kWh;4
7;100;KDY;U32;;Energy day;;0.100000;0.000000;kWh;4
8;100;KT0;U32;;Energy total;;1.000000;0.000000;kWh;4
9;100;PIN;U32;;Installed capacity;;0.500000;0.000000;W;4
10;100;PRL;U8;;Relative output;;1.000000;0.000000;%;4
11;101;UD01;U16;;Voltage DC tracker 1;;0.100000;0.000000;V;4
12;101;UD02;U16;;Voltage DC tracker 2;;0.100000;0.000000;V;4
13;102;UD01;U16;;Voltage DC tracker 3;;0.100000;0.000000;V;4
14;102;UD02;U16;;Voltage DC tracker 4;;0.100000;0.000000;V;4
15;100;UL1;U16;;Voltage phase 1;;0.100000;0.000000;V;4
16;100;UL2;U16;;Voltage phase 2;;0.100000;0.000000;V;4
17;100;UL3;U16;;Voltage phase 3;;0.100000;0.000000;V;4
18;101;ID01;U16;;Current DC tracker 1;;0.010000;0.000000;A;4
19;101;ID02;U16;;Current DC tracker 2;;0.010000;0.000000;A;4
20;102;ID01;U16;;Current DC tracker 3;;0.010000;0.000000;A;4
21;102;ID02;U16;;Current DC tracker 4;;0.010000;0.000000;A;4
22;100;IL1;U16;;Current phase 1;;0.010000;0.000000;A;4
23;100;IL2;U16;;Current phase 2;;0.010000;0.000000;A;4
24;100;IL3;U16;;Current phase 3;;0.010000;0.000000;A;4
25;100;TKK;U16;;Temperature power unit 1;;1.000000;0.000000;°C;4
26;100;SYS;U32;;Status code;;1.000000;0.000000;;8
27;200;DPR;U32;;Desired power relative;;1.000000;0.000000;ppm;17
28;200;DPH;U32;;Desired phi;;1.000000;-3141592.000000;µrad;17
29;200;DQR;U32;;Desired Q relative;;1.000000;-1000000.000000;sppm;17
30;200;RCA;U8;;Remote control action;;1.000000;0.000000;;17
31;200;PLR;U8;;Active power limitation;cmdPwrPercent;1.000000;0.000000;%;17
```

Example of a definition file for a “Central inverter type 1” category Solarmax device:

```
SOLARMAX;Inverter;SOLARMAX;model
1;100;ADR;U8;;Network address;;1.000000;0.000000;;1
2;100;TYP;U16;;Type;;1.000000;0.000000;;1
3;100;PAC;U32;;AC ouput;;0.500000;0.000000;W;4
4;100;KHR;U32;;Operating hours;;1.000000;0.000000;;4
5;100;KYR;U32;;Energy year;;1.000000;0.000000;kWh;4
6;100;KMT;U32;;Energy month;;1.000000;0.000000;kWh;4
7;100;KDY;U32;;Energy day;;0.100000;0.000000;kWh;4
8;100;KT0;U32;;Energy total;;1.000000;0.000000;kWh;4
9;100;PIN;U32;;Installed capacity;;0.500000;0.000000;W;4
10;100;PRL;U8;;Relative output;;1.000000;0.000000;%;4
11;100;UDC;U16;;Voltage DC;;0.100000;0.000000;V;4
12;100;UL1;U16;;Voltage phase 1;;0.100000;0.000000;V;4
13;100;UL2;U16;;Voltage phase 2;;0.100000;0.000000;V;4
14;100;UL3;U16;;Voltage phase 3;;0.100000;0.000000;V;4
15;100;IDC;U16;;Current DC;;0.0100000;0.000000;A;4
16;100;IL1;U16;;Current phase 1;;0.010000;0.000000;A;4
17;100;TKK;U16;;Temperature power unit 1;;1.000000;0.000000;°C;4
18;100;SYS;U32;;Status code;;1.000000;0.000000;;8
19;200;PLR;U8;;Active power limitation;cmdPwrPercent;1.000000;0.000000;%;17
```

Example of a definition file for a “Central inverter type 2” category Solarmax device:

```
SOLARMAX;Inverter;SOLARMAX;model
1;100;ADR;U8;;Network address;;1.000000;0.000000;;1
2;100;TYP;U16;;Type;;1.000000;0.000000;;1
3;100;PAC;U32;;AC ouput;;0.500000;0.000000;W;4
4;100;KHR;U32;;Operating hours;;1.000000;0.000000;;4
5;100;KYR;U32;;Energy year;;1.000000;0.000000;kWh;4
6;100;KMT;U32;;Energy month;;1.000000;0.000000;kWh;4
7;100;KDY;U32;;Energy day;;0.100000;0.000000;kWh;4
8;100;KT0;U32;;Energy total;;1.000000;0.000000;kWh;4
9;100;PIN;U32;;Installed capacity;;0.500000;0.000000;W;4
10;100;PRL;U8;;Relative output;;1.000000;0.000000;%;4
11;101;UDC;U16;;Voltage DC tracker 1;;0.100000;0.000000;V;4
12;102;UDC;U16;;Voltage DC tracker 2;;0.100000;0.000000;V;4
13;103;UDC;U16;;Voltage DC tracker 3;;0.100000;0.000000;V;4
14;104;UDC;U16;;Voltage DC tracker 4;;0.100000;0.000000;V;4
15;105;UDC;U16;;Voltage DC tracker 5;;0.100000;0.000000;V;4
16;106;UDC;U16;;Voltage DC tracker 6;;0.100000;0.000000;V;4
17;107;UDC;U16;;Voltage DC tracker 7;;0.100000;0.000000;V;4
18;108;UDC;U16;;Voltage DC tracker 8;;0.100000;0.000000;V;4
19;109;UDC;U16;;Voltage DC tracker 9;;0.100000;0.000000;V;4
20;110;UDC;U16;;Voltage DC tracker 10;;0.100000;0.000000;V;4
21;111;UDC;U16;;Voltage DC tracker 11;;0.100000;0.000000;V;4
22;112;UDC;U16;;Voltage DC tracker 12;;0.100000;0.000000;V;4
23;100;UI1;U16;;Voltage L1-L2;;0.100000;0.000000;V;4
24;100;UI2;U16;;Voltage L2-L3;;0.100000;0.000000;V;4
25;100;UI3;U16;;Voltage L3-L1;;0.100000;0.000000;V;4
26;101;IDC;U16;;Current DC tracker 1;;0.0100000;0.000000;A;4
27;102;IDC;U16;;Current DC tracker 2;;0.0100000;0.000000;A;4
28;103;IDC;U16;;Current DC tracker 3;;0.0100000;0.000000;A;4
29;104;IDC;U16;;Current DC tracker 4;;0.0100000;0.000000;A;4
30;105;IDC;U16;;Current DC tracker 5;;0.0100000;0.000000;A;4
31;106;IDC;U16;;Current DC tracker 6;;0.0100000;0.000000;A;4
32;107;IDC;U16;;Current DC tracker 7;;0.0100000;0.000000;A;4
33;108;IDC;U16;;Current DC tracker 8;0.0100000;0.000000;A;4
34;109;IDC;U16;;Current DC tracker 9;;0.0100000;0.000000;A;4
35;110;IDC;U16;;Current DC tracker 10;;0.0100000;0.000000;A;4
36;111;IDC;U16;;Current DC tracker 11;;0.0100000;0.000000;A;4
37;112;IDC;U16;;Current DC tracker 12;;0.0100000;0.000000;A;4
38;100;IL1;U16;;Current phase 1;;0.010000;0.000000;A;4
39;100;IL2;U16;;Current phase 2;;0.010000;0.000000;A;4
40;100;IL3;U16;;Current phase 3;;0.010000;0.000000;A;4
41;100;TKK;U16;;Temperature power unit 1;;1.000000;0.000000;°C;4
42;100;SYS;U32;;Status code;;1.000000;0.000000;;8
43;200;PLR;U8;;Active power limitation;cmdPwrPercent;1.000000;0.000000;%;17
```

Example of a definition file for a “MaxCount” category Solarmax device:

```
SOLARMAX;Inverter;SOLARMAX;model
1;100;ADR;U8;;Network address;;1.000000;0.000000;;1
2;100;TYP;U16;;Type;;1.000000;0.000000;;1
3;100;I1Y;U32;;Pulse counter 1 year;;0.100000;0.000000;kWh;4
4;100;I1P;U32;;Pulse counter 1 power;;0.500000;0.000000;W;4
5;100;I1S;U16;;Pulse counter 1 scaling;;1.000000;0.000000;;4
6;100;I1D;U32;;Pulse counter 1 day;;0.100000;0.000000;kWh;4
7;100;I1T;U32;;Pulse counter 1 total;;0.100000;0.000000;kWh;4
8;100;I2Y;U32;;Pulse counter 2 year;;0.100000;0.000000;kWh;4
9;100;I2P;U32;;Pulse counter 2 power;;0.500000;0.000000;W;4
10;100;I2S;U16;;Pulse counter 2 scaling;;1.000000;0.000000;;4
11;100;I2D;U32;;Pulse counter 2 day;;0.100000;0.000000;kWh;4
12;100;I2T;U32;;Pulse counter 2 total;;0.100000;0.000000;kWh;4
```

Example of a definition file for a “MaxMeteo” category Solarmax device:

```
SOLARMAX;Inverter;SOLARMAX;model
1;100;ADR;U8;;Network address;;1.000000;0.000000;;1
2;100;TYP;U16;;Type;;1.000000;0.000000;;1
3;100;RYR;U32;;Solar energy year;;0.100000;0.000000;kWh/m²;4
4;100;RDY;U32;;Solar energy day;;0.100000;0.000000;kWh/m²;4
5;100;RT0;U32;;Solar energy total;;0.100000;0.000000;kWh/m²;4
6;100;RAD;U16;;Solar irradiation;;1.000000;0.000000;W/m²;4
7;100;TSZ;U16;;Temperature solar cells;;1.000000;-32767.000000;°C;4
```

6. Solarmax alarm file

All variables defined with the action field set to 8 in the definition file cause an alarm to be generated when they change state.

Special “Status Code” case:

The specificity of this variable is that it gives the device operating status in addition to reporting a possible fault. To avoid reporting too many alarms to the remote server, only the status codes greater than 20100 trigger alarms.

Please contact Solarmax for more information on device error code meanings.