

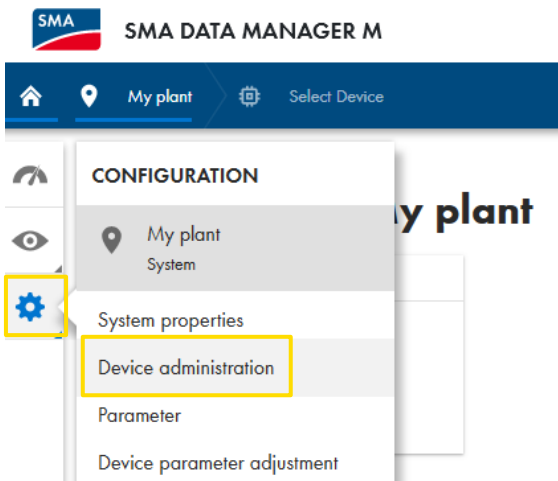
## Set-up guide for IMT Modbus Sensors with SMA Datamanager

### Requirements

- No SMA inverter with SMADData protocol connected to same bus as IMT Modbus Sensor
- Different Modbus addresses for each sensor when connected to the same bus, but same Data Format
- Sensor with Modbus Address 3 or greater

### Add new Device

Select **Configuration** and then **Device administration**. Click the **“Plus”** sign.



## Device administration ?

Filter

Device name	
	⋮ +

## Device Registration

Select **Modbus devices** and click **Continue**. Click **Managing Modbus profiles**.

### Device registration

1. STEP 2. STEP 3. STEP

#### Protocol selection

Here you can add devices to your system. Select the protocol of your device first.

**Modbus devices** Add Modbus devices.

**SMA Speedwire devices** Add Speedwire devices (e.g. SMA inverter or SMA Energy Meter).

**SMA FLX/TLX devices** Add SMA FLX/TLX devices.

**SMA data devices** Add SMA data devices.

### Device registration

1. STEP 2. STEP 3. STEP

#### Modbus devices

Here you can search Modbus devices according to certain criteria and add them to your system.

Interface\* ?  
Ethernet Modbus TCP

Modbus profile\* ?  
SunSpec Managing Modbus profiles

IP address\* ? 192.168.101.[1-254] Port\* ? 502

Unit ID\* ? 1 Device name\* ? Modbus

## Configuring Modbus profile

Click **Create a new Modbus profile**.

Fill the table as shown below. Click the **“Plus”** sign for the needed Registers according your sensor type.

Channel designation	Register address	Register type	Function code	Scaling factor	
					+

**Individual set-up for sensors**

Change the following data according to the sensor type connected.

**!** The cell temperature is a roughly approximation for the PV module temperature when using signal address 7.

Si-RS485TC-T-MB



PV module temperature ≈ Cell temperature

Channel designation	Register address	Register type	Function code	Scaling factor	
Insolation [1]	0	uint16	(0x04) ...	0.1	
Temperature [1]	7	int16	(0x04) ...	0.1	

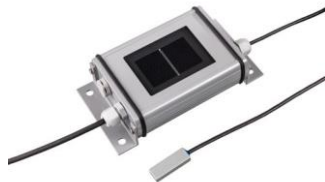
Si-RS485TC-2T-MB



PV module temperature ≈ Cell temperature

Channel designation	Register address	Register type	Function code	Scaling factor	
Insolation [1]	0	uint16	(0x04) ...	0.1	
Temperature [1]	7	int16	(0x04) ...	0.1	
Temperature [2]	8	int16	(0x04) ...	0.1	

Si-RS485TC-T-Tm-MB



Channel designation	Register address	Register type	Function code	Scaling factor	
Insolation [1]	0	uint16	(0x04) ...	0.1	
Temperature [2]	8	int16	(0x04) ...	0.1	

Si-RS485TC-2T-v-MB + Tamb-Si + Vwind-Si  
 PV module temperature ≈ Cell temperature



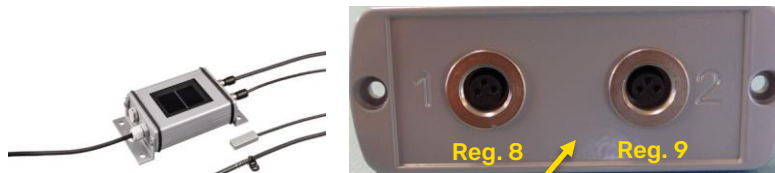
Channel designation	Register address	Register type	Function code	Scaling factor	
Insolation [1]	0	uint16	(0x04) ...	0.1	
Speed [1]	3	uint16	(0x04) ...	0.1	
Temperature [1]	7	int16	(0x04) ...	0.1	
Temperature [2]	8	int16	(0x04) ...	0.1	

Si-RS485TC-2T-v-MB + Tmodul-Si + Vwind-Si



Channel designation	Register address	Register type	Function code	Scaling factor	
Insolation [1]	0	uint16	(0x04) ...	0.1	
Speed [1]	3	uint16	(0x04) ...	0.1	
Temperature [1]	8	int16	(0x04) ...	0.1	


Si-RS485TC-3T-MB



Channel designation	Register address	Register type	Function code	Scaling factor	
Insolation [1]	0	uint16	(0x04) ...	0.1	
Temperature [1]	8	int16	(0x04) ...	0.1	
Temperature [2]	9	int16	(0x04) ...	0.1	


Ta-ext-RS485-MB



Channel designation	Register address	Register type	Function code	Scaling factor	
Temperature [2] ▼	8	int16 ▼	(0x04) ... ▼	0.1	

Tm-RS485-MB



Channel designation	Register address	Register type	Function code	Scaling factor	
Temperature [1] ▼	7	int16 ▼	(0x04) ... ▼	0.1	

Click

Click **save**.

## Device Registration

Change the Interface to the COM Port which is used. Select the saved Modbus Profile. Select the correct Baud rate from the Sensor (Default is 9600 baud). After pressing "Continue" the SMA Data Manager M starts searching your Sensor. Make sure that the sensor is connected to the RS485 port and to the power supply.

**Device registration**

1. STEP 2. STEP 3. STEP

**Modbus devices**

Here you can search Modbus devices according to certain criteria and add them to your system.

Interface\* i  
COM1 RS485 Modbus RTU

Modbus profile\* i  
Si-RS485 Sensor Profile [Managing Modbus profiles](#)

Baud rate\* i  
9600  Advanced settings

Device address\* i **[Highlighted]**

Device name\* i  
Irradiance Sensor Array XYZ

Cancel Previous Continue

The device address must be 3 or greater. Our default address is 1. If the sensor is not preconfigured, change the address with our Si-Modbus-Configurator. Software can be downloaded at <https://imt-technology.com/en/downloads>.

The SMA Data Manager M should detect the sensor. Select the sensor, enter the sensor's serial number and press "save."

**Device registration**

1. STEP 2. STEP 3. STEP

**1** Devices detected

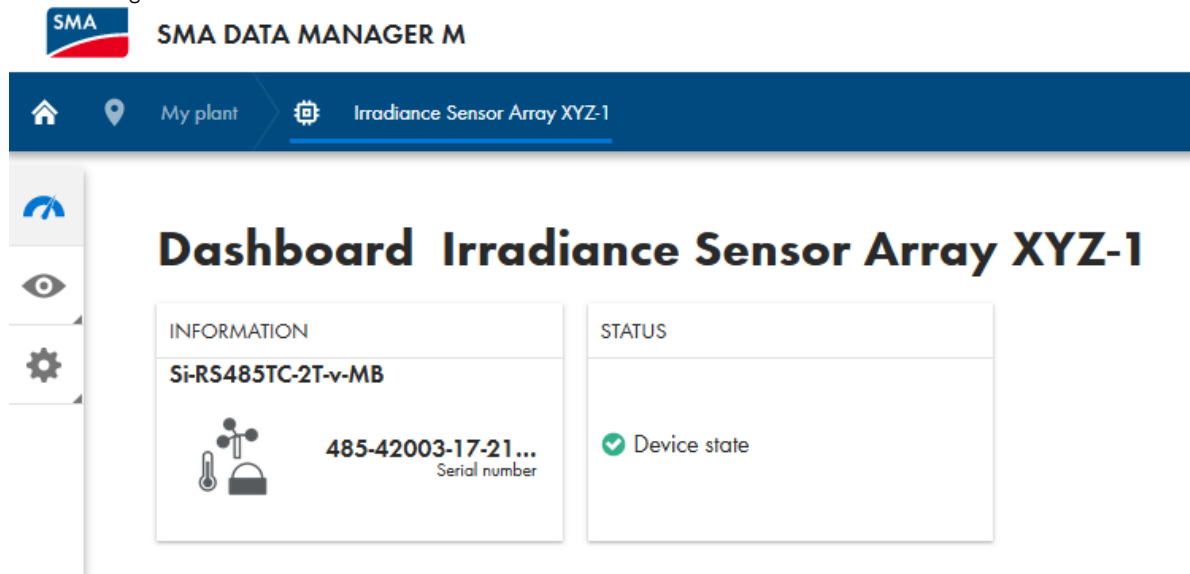
Select the devices that you would like to add to your system.

<input checked="" type="checkbox"/>	Product Manufacturer	Serial number	Device name
<input checked="" type="checkbox"/>	Si-RS485TC-2T-v-MB Ingenieurbüro Mencke & Te... COM1, 9600, Unit ID 10	485-42003-17-21220001	Irradiance Sensor Array XYZ-1

You have added 1 out of 50 devices to the system.

Cancel Previous Save

After selecting the sensor in the Device administration, you can check the **Dashboard** and **Instantaneous values** for proper device integration and measurement.




**SMA DATA MANAGER M**

My plant Irradiance Sensor Array XYZ-1


## Dashboard Irradiance Sensor Array XYZ-1

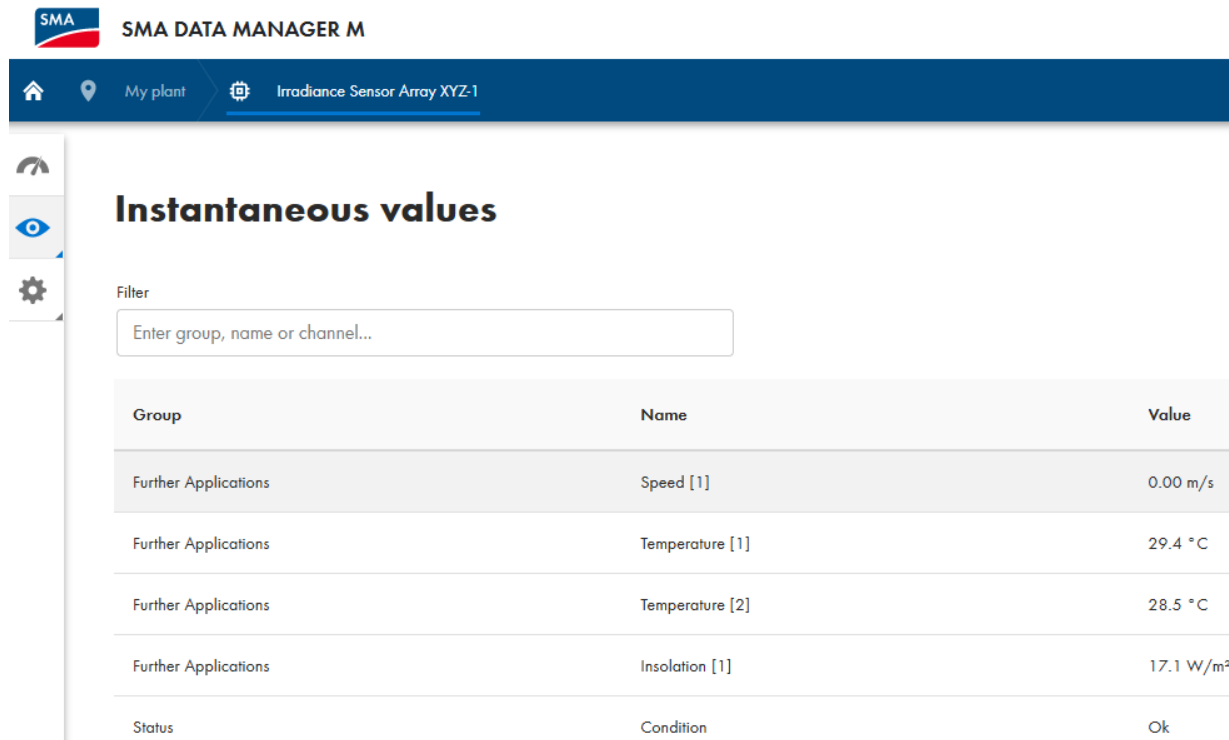
**INFORMATION**

**Si-RS485TC-2T-v-MB**

 **485-42003-17-21...**  
Serial number

**STATUS**

 Device state



**SMA DATA MANAGER M**

My plant Irradiance Sensor Array XYZ-1

## Instantaneous values

Filter

Group	Name	Value
Further Applications	Speed [1]	0.00 m/s
Further Applications	Temperature [1]	29.4 °C
Further Applications	Temperature [2]	28.5 °C
Further Applications	Insolation [1]	17.1 W/m <sup>2</sup>
Status	Condition	Ok

### Intelligent Measurement & Testing