Instructions for integrating

AC•THOR / AC•THOR 9s / AC ELWA 2

with Huawei up to 50KTL-M3 with Smart Dongle WLAN-FE Dongle, with Huawei Smart Logger, with Huawei EMMA, or via Modbus RTU

1. Default settings on my-PV devices

Before commissioning, it is essential that you read the assembly instructions that accompany the device, as well as the operating instructions available on line.
Find the AC•THOR operation manual here.
Find the AC ELWA 2 operation manual here.

2. Communication with Huawei

Four control types are available for Huawei:

Huawei EMMA	For connection to EMMA.
Manual	Communication with Huawei takes place via the local network (LAN).
	The my-PV device is connected to the router via LAN or WLAN.
	According to information from Huawei, EMMA can currently only be connected to the router via LAN!
	In combination with the EMMA, the IP address must be set to a static IP address for the AC-THOR or the AC ELWA 2! **To avoid any connection problems of the AC-THOR or AC ELWA 2 in the network, the static IP address should not be set on the device, but on the router!**
	At least the software version "Smart HEMS V100R024C00SPC100" must be installed on the Emma!

Huawei (Modbus TCP) Manual	For the connection to the Smart Dongle.. Communication with Huawei takes place via the local network (LAN). The my-PV device is connected to the router via LAN or WLAN. **If a Huawei wallbox forms a virtual meter network in the system, the Smart Dongle can no longer be connected to my-PV via Modbus TCP (information from Huawei from 27.12.2023). Surplus measurement at the grid access point can alternatively be carried out by a my-PV WiFi meter.**
Huawei SmartLogger Manual	For the connection to the Smart Logger. Communication with Huawei takes place via the local network (LAN). The my-PV device is connected to the router via LAN or WLAN.
Huawei (Modbus RTU)	For a direct RS485 connection of the my-PV device to the inverter. **my-PV and Huawei recommend communication via a local network (LAN), not via Modbus RTU!** **This control type is not suitable for combination with battery storage!**

3. Communication with Huawei via local network (LAN)

AC•THOR or AC ELWA 2 are connected to Huawei in the network via a router. Within this network, the device receives the information how much surplus PV power is available from Huawei.

⚠ Do not connect the device directly to the inverter or battery system!

⚠ When controlled by an inverter, a feed-in meter is required in the system. Otherwise, the query of the inverter does not provide any data.

Settings on my-PV device

Select "Huawei (Modbus TCP) Manual" for the connection to the Smart Dongle either on the display or in the web interface.

"Huawei SmartLogger Manual" must be selected for the connection to the Smart Logger. For this type, the communication parameters are preset from AC•THOR firmware a0021400, for the AC ELWA 2 from firmware e0000800.

"Huawei EMMA Manual" must be selected for the connection to the EMMA. For this type, the communication parameters are preset from AC•THOR firmware a0021700, for the AC ELWA 2 from firmware e0001100.

The IP address of the signal source must then be statically entered on the display under "**Ctrl IP**".

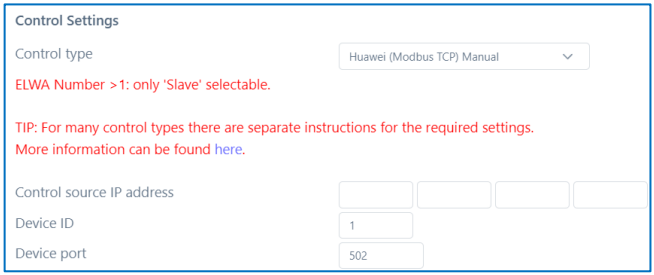
Alternatively, these settings can also be made on the web interface of the AC•THOR. In the web setup, the parameters "Device ID" and "Device Port" can also be set by Huawei.

For the control "Huawei (Modbus TCP) Manual", my-PV presets device ID 1 and device port 502.

For the control „Huawei SmartLogger Manual“ my-PV presets device ID 11 and device port 502. Device ID 11 only applies to the Huawei DTSU666H meter. If a different energy meter is used, the device ID must be adapted!

With the control “Huawei EMMA Manual”, my-PV presets 0 for the device ID and 502 for the device port.

⚠ If there are several inverters, the unit ID may have to be adjusted!



The "power timeout" is preset to 60 seconds.

If there is a battery storage (ESS) in the system and it is to be charged with priority, then the "Target value of the control" should be set to -150 W. Otherwise, we recommend leaving -50 W.

⚠ **When communicating with Huawei via network, the IP address of the signal source must not change during operation (e.g. by a DHCP router), otherwise AC•THOR or AC ELWA 2 will lose the control signal!**

Settings on Huawei for EMMA

⚠ EMMA must be connected to the router via LAN!

⚠ The IP address of the EMMA must be set to a static IP address!

⚠ The following information and illustrations have been kindly provided to my-PV by Huawei. my-PV cannot guarantee the accuracy of the information or that the views are up to date.

At least the software version (Smart HEMS V100R024C00SPC100) must be installed on the Emma!

1. log in directly as an installer on the Emma.
2. In the menu, tap on Settings and select Communication settings.
3. Select Modbus TCP and make the following settings:
    a. Enable modbus TCP
    b. Disable TLS decryption
    c. In the client ip address field type in the my-PV device IP

Settings on Huawei with the Smart Dongle

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Overview

- All **Huawei inverters** up to 40kW rated power with SmartDongle WLAN-FE are **compatible with MODBUS TCP**
  - SUN2000 2 to 6 KTL-L1
  - SUN2000 3 to 10KLT-M0/M1
  - SUN2000 12 to 20KLT-M0/M2
  - SUN2000 30 to 40KTL-M3

Smart Dongle WLAN-FE

- Huawei inverter is connected to the router with the **SmartDongle WLAN-FE** via FE cable (FE = Fast Ethernet) or WLAN in the local network.
- It is recommended to install the latest software version (xxxSPC153 in April 2023) on the SmartDongle WLAN-FE (SDongleA-05); it is recommended to perform the software upgrade in the FusionSolar Portal.
- Afterwards, the communication must be opened in the SmartDongle WLAN-FE so that the values can be read from the inverter via MODBUS TCP.
- Display the local IP address of the inverter.

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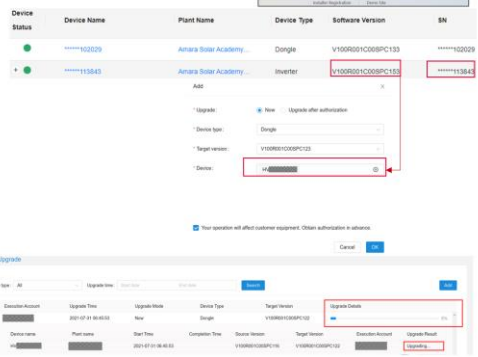
HUAWEI

Software Upgrade in FusionSolar Portal

- Read the latest software from SDongleA-05
  - Log in to FusionSolar Portal
  - Plant → Device management
- Upgrade software from SDongleA-05
  - Plants → Upgrade management → Add
    - Update **Now**
    - Device Type **Dongle**
    - Target version V100R001C00**SPC153** or higher
    - Select device and check device name
  - Confirm → Message «Operation done»
- Progress of upgrade is displayed
  - New entry appears in the table, progress is shown in %.
  - Resulte: Failed: 0, **Successful: 1**
- **Smart Dongle restarts after approx. 10 minutes**
  - Check software version: → Device management



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HUAWEI

Software Upgrade with APP (Alternative)

- *The software upgrade can also be carried out with the FusionSolar APP; however, the method is more complex than in the portal.*
- **Save V100R001C00SPC153 or higher on the smartphone.**
- Upgrade is done on the SmartDongle; therefore connect the FusionSolar APP directly to the SmartDongle.
  - WLAN of the SmartDongle is only active for a few minutes; check in the Android settings whether the WLAN with SSID SDongleA-HVxxx is visible.
  - If the WLAN is not visible, disconnect the SmartDongle from the inverter and reconnect it, wait a while until SDongleA-HVxxx appears.
- Connect with SmartDongle
  - FusionSolar APP → I → Commissioning
  - Scan QR code of SmartDongle WLAN-FE → WLAN Password = **Changeme**
  - Login Installer and password 00000a (SmartDongle appears in the picture)
- Maintenance → Devices up to date (update)
  - Global Search → **SDongleV100R001C00SPC153_package** or higher
  - Upgrade freeze step is displayed
  - SmartDongle restarts after approx. 10 minutes

Please always use the latest APP version!!!

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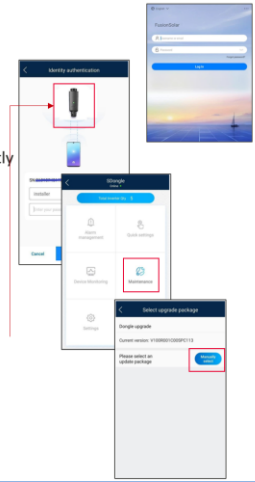
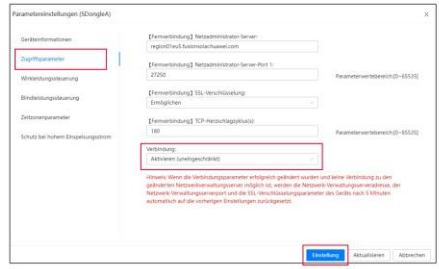


⚠ **The latest software version must always be installed on the smart dongle!**

Enable Communication in FusionSolar Portal

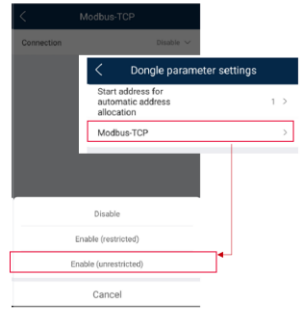
- With the SmartDongle software xxSPC153 or higher, energy management systems can control the SUN2000 inverter via MODBUS TCP (read and write). Port 502 is used for this purpose. This is closed by default and must be opened.
- **SmartDongle** MODBUS TCP **open**
  - In FusionSolar Portal login
  - → Choose Plant→ Switch to the register Devices
    → SmartDongle choose → Parameter settings
    → Register access parameters
    → Connection / MODBUS TCP
    «**Enable (unrestricted)**»
    → Settings



HUAWEI

Enable Communication with APP (Alternative)

- With the xxSPC153 SmartDongle software, energy management systems can control the SUN2000 inverter and the LUNA2000 battery via Modbus (read and write). Port 502 is used for this purpose. This is closed by default and must be opened for SolarManager.
- **Modbus TCP enable**
  - Connect to inverter (QR Code)
  - → Settings → Communication configuration
    → Dongle-Parametereinstellungen → Modbus-TCP
    → Change to «Enable (unrestricted)» → Confirm



Please always use the latest APP version!!!

HUAWEI

Read out IP address from APP

- The IP address of the inverter in the local network can ONLY be read out with the FusionSolar APP.
- Read IP address
  - Connect FusionSolar APP to the inverter (QR code)
  - → Settings → Communications configuration
    → Select Router connection settings
    → Select WLAN connection or FE connection (LAN cable)
    → Expand details→ IP-Adress Read

Read out MODBUS ID from APP

- ID-Adress Read
  - Connect FusionSolar APP to the inverter (QR code)
  - → Settings → Communications configuration
    → RS485_1
    → Com adress is also the MODBUS TCP address

The inverter with the Smart Dongle usually has the address 1 and the other inverters a higher number. Please check!
Please always use the latest APP version!!!

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4. Communication with Huawei via Modbus RTU

⚠ **If the Huawei Smart Dongle is used on the inverter, communication problems may occur with this type of connection. my-PV and Huawei recommend communication via a local network (LAN), not via Modbus RTU!**

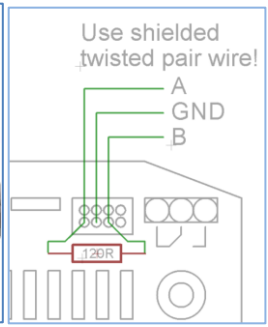
The my-PV device is connected directly to the Huawei inverter via three-pole Modbus RTU cabling (RS485, A B GND).

⚠ Use shielded twisted pair cable and connect the shield to earth (GND) at one end!

⚠ RTU bus must be provided with a 120 Ohm terminating resistor!

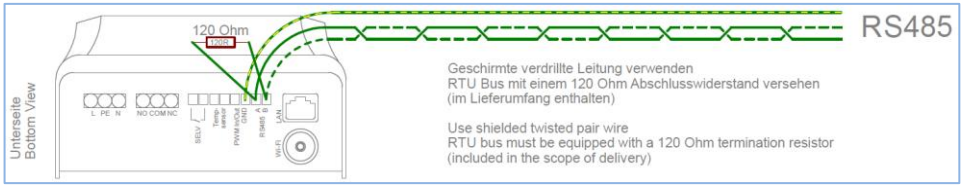
(Not included in the scope of delivery)

⚠ When controlling via Modbus RTU, the operating mode M7 cannot be used!



Three pins on the 8-pin connector of the AC•THOR are the Modbus RTU communication port.

The 120 Ohm terminating resistor is not included with the AC•THOR!



On the AC ELWA 2, the connection is identified by RS485, A, B, GND.

Select "Huawei (Modbus RTU)" for the control type either on the display or - if a network connection is available - in the web interface.