

Guide for Parallel Fox 30kW Inverters

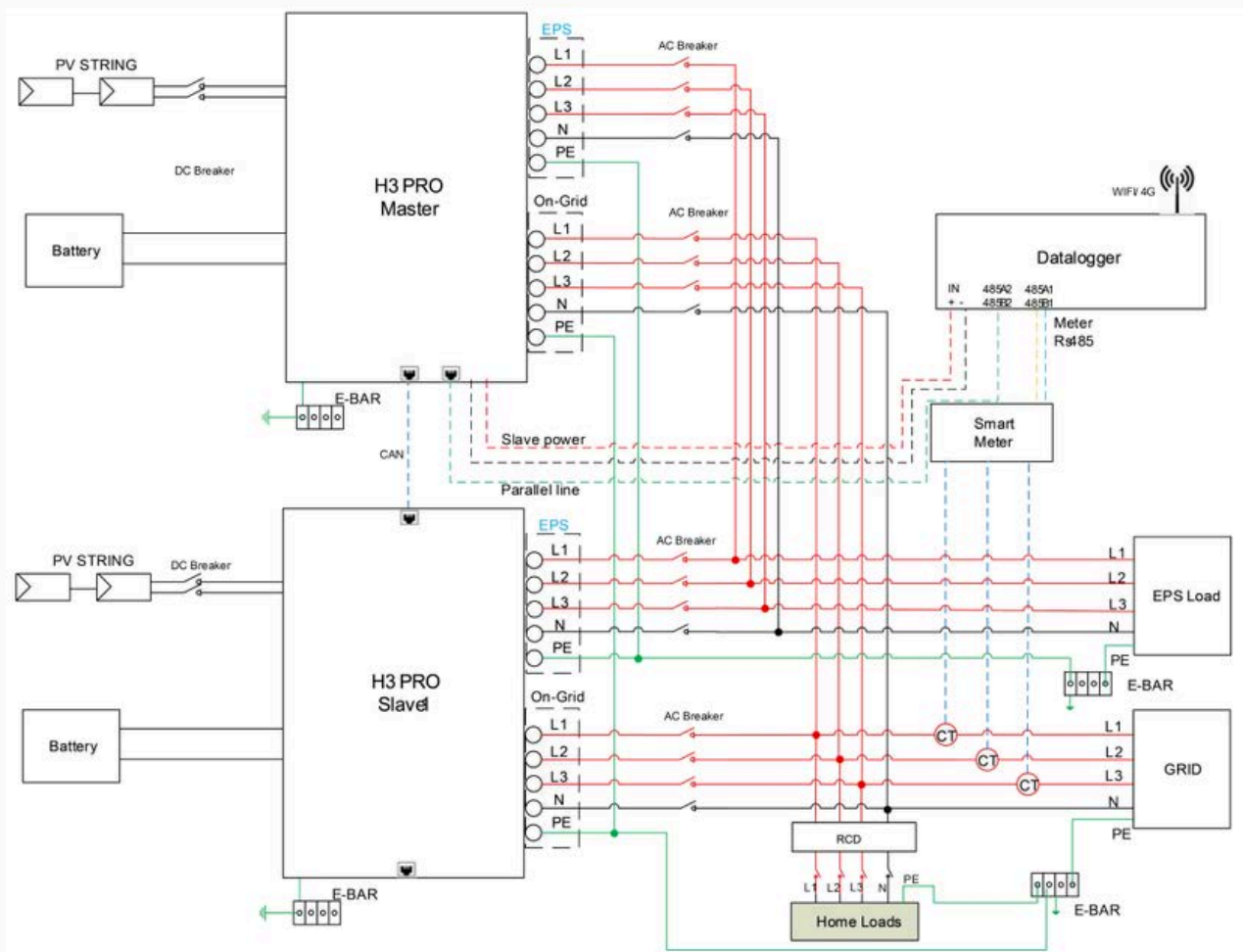
A three-phase parallel installation is relatively simple, but the information in the user manual needs to be clarified

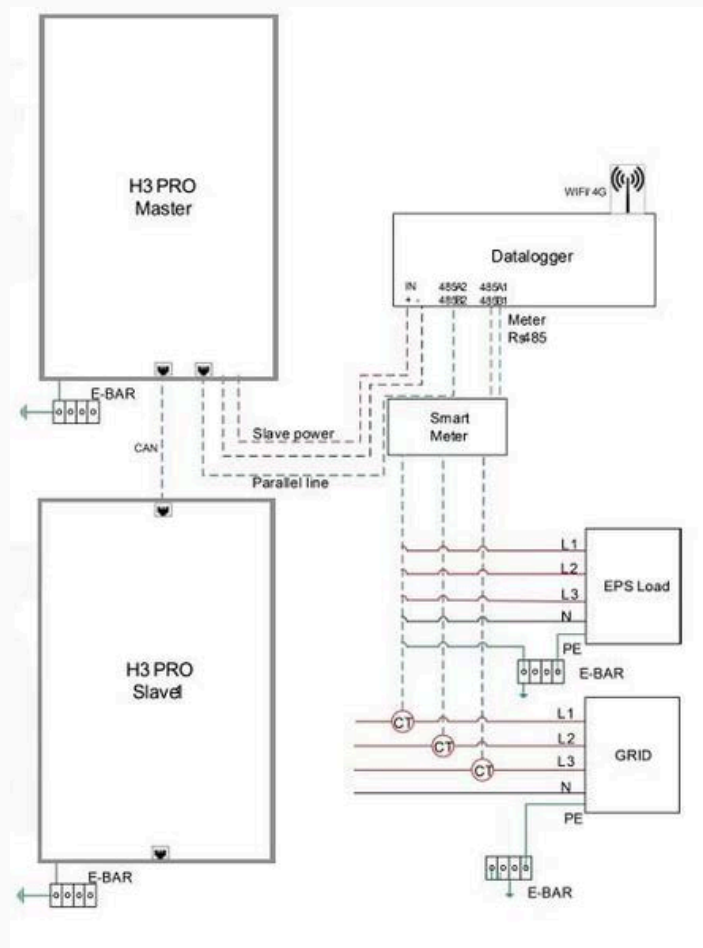
AC connection Diagram

Fox 30kW Parallel Connection

Fox 30kW inverters can be connected in parallel up to a maximum of six inverters when operating Off-Grid.

In this system, one inverter will be set as the "Master inverter" which will control every inverter's energy management and dispatch control to all other slave inverters and communicate with the "Master inverter" by CAN communication-parallel connection.

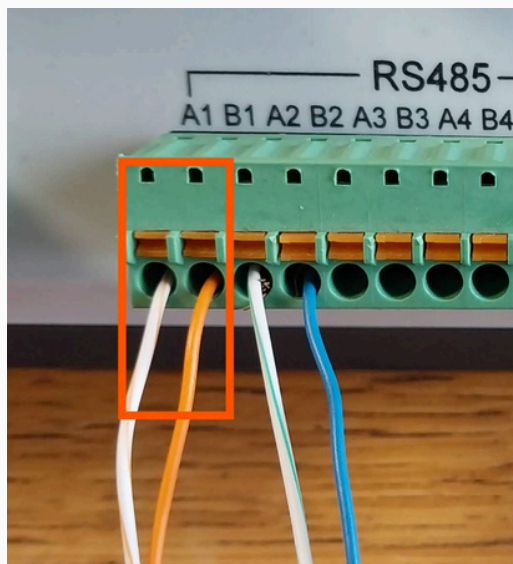




When doing parallel installations, only the Smartlogger/EMS has a CT/Meter connected, as it will control the power output of the Master and Slave inverters accordingly.

The communication cable needs to be a 2-pair cable, this cable will run from the Meter to the SmartLogger,

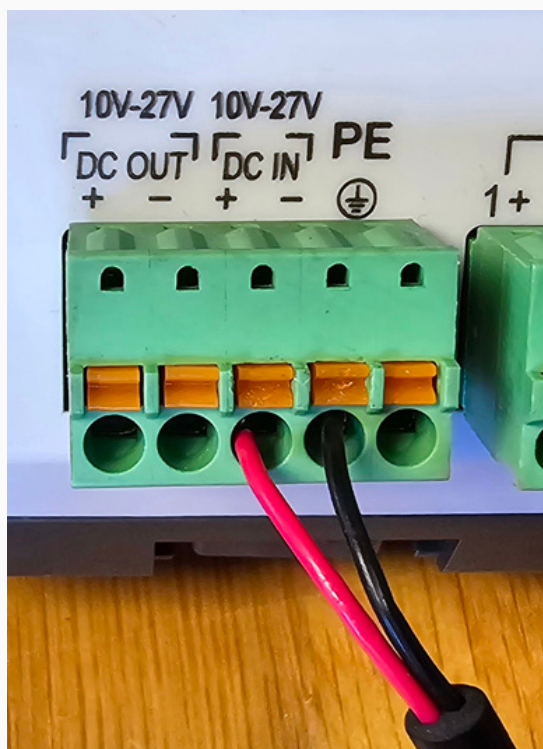
On the Meter Pin 24/A will connect to Pin 485A1 & Pin 25/B will connect to Pin 485B1 on the SmartLogger/EMS



CT Meter Connection		
Equipment	Meter	SmartLogger
Port Name	Meter Pin	RS485
Meter RS485A	PIN 24	485A1
Meter RS485B	PIN 25	485B1

SmartLogger Power connection

A 2-pair cable needs to be connected from the Master Inverter's COM port PIN 11 = + & PIN 10 = - to the SmartLogger's + & -



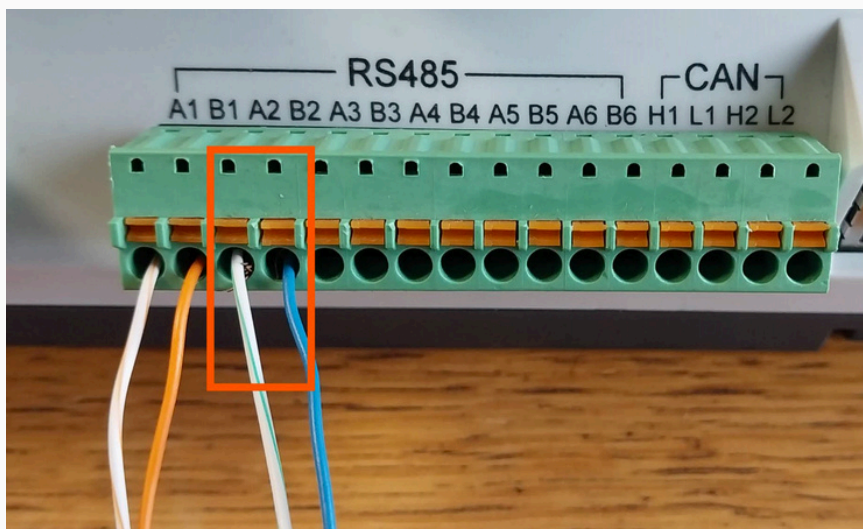
SmartLogger Power Connection		
Equipment	SmartLogger	Fox 30kW
Port Name	Power Port	COM
+ 12 VDC	+ 12 VDC	+ 12 SELV (PIN 11)
GND	GND	GND COM (PIN 10)

Communication/CAN connections for Inverters

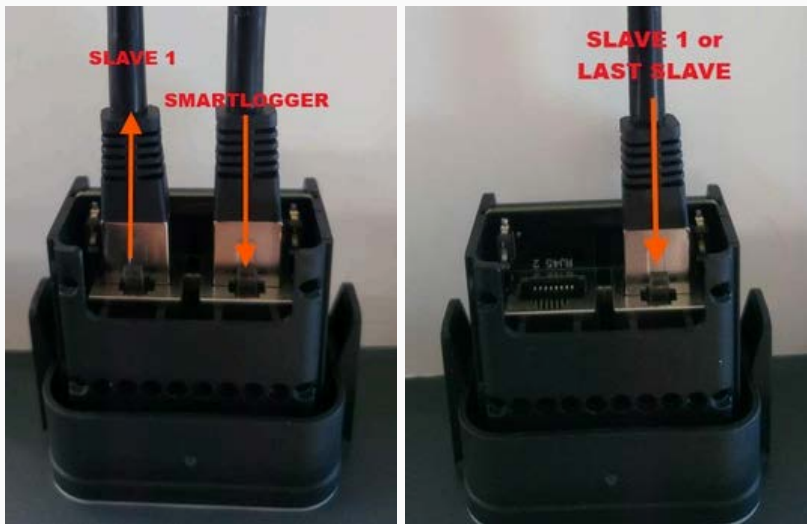
The communication cable needs to be a standard CAT5/6 cable with RJ45 connectors, using the standard 8-pin RJ45 pinouts. On the Master inverter, a CAN cable will be connected to RJ45-1 on the Master inverter with an RJ45 connector,



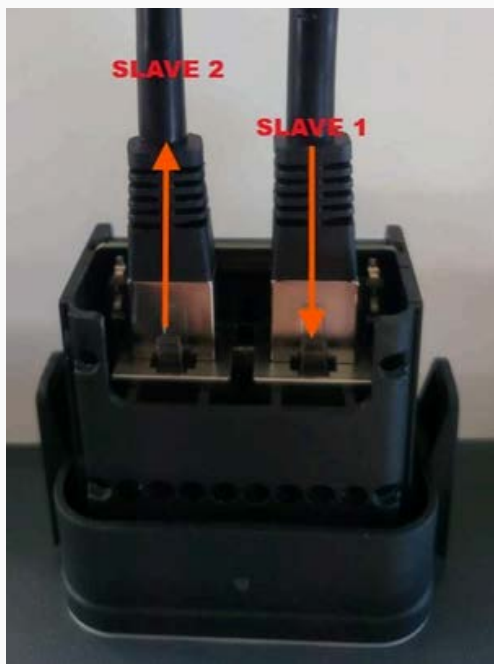
On the Smartlogger the Green/White wire connects to 485A2 and the Blue wire connects to 485B2



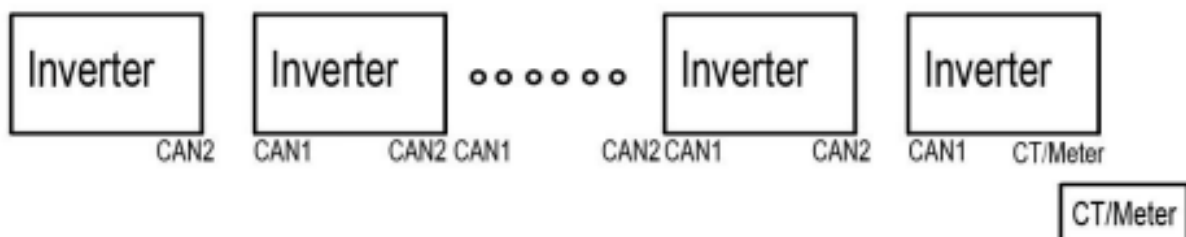
On the Master inverter, a CAN cable will be connected to RJ45-2 with an RJ45 connector and connected to RJ45-1 on the Slave inverter



If more than two inverters are being installed then from the **Master Inverter's CAN RJ45-2** to **Slave 1 RJ45-1** then **RJ45-2 to Slave 2 RJ45-1** and so forth

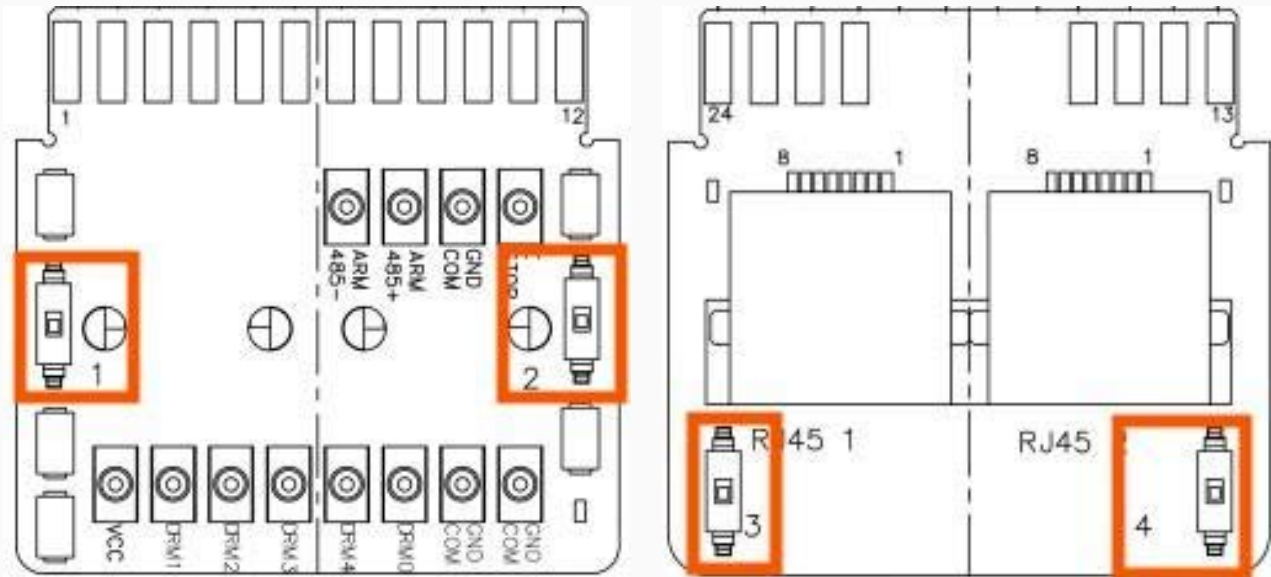


As pictured, the communication cable should go from the **'Parallel 2'** port on the **Master Inverter** to the **'Parallel 1'** on the **1st Slave Inverter**, and so on for each **Slave Inverter**.



DIP Switch settings for Inverters

For the **DIP** switch settings, The **DIP** switch on the **Master Inverter** and the **last Slave Inverter** needs to be adjusted, and **ALL** of the toggles need to be shifted to the '**ON/UP**' position. '**DIP 1, 2, 3 & 4**'



If more than 1 Slave inverter is connected there are no DIP Switches that need to be set,

Setting Address/ID of Inverters

For the settings on each inverter, you need to go to '**Menu - Settings - Communication - RS485**' and you will see 2 available options:

- Device ID 1**
- Device ID 2**

The '**Device ID 2**' can be any unique number from 000 - 249, and must be different for each inverter in the parallel setup. We would recommend setting the **Master to 001**, and then numbering the **Slaves in sequence(...002, 003)** as applicable to make it easier to remember.

Please record the inverter Serial Number and the **Device ID 2** that is set on each inverter and if it is the Master of a Slave Inverter, as this will be needed when adding the inverters to the EMS on the FoxEss Cloud,



Master:

Slave 1:

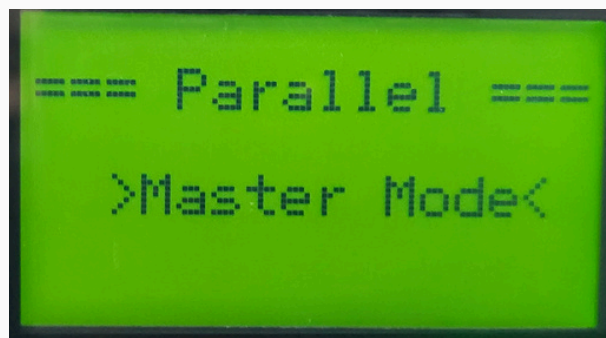
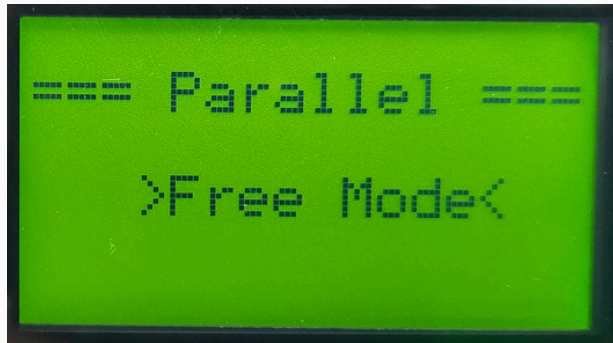


Slave 2:



Setting Inverters in Parallel Mode

For the settings on the **Master Inverter**, you need to go to '**Menu - Settings - Parallel**' and you will see **Free-Mode**



This will need to be changed to **Master Mode**
Once this has been changed the Master Inverter will display Master
and the Slave Inverter/Inverters will display **Slave 1, 2**

System Start-up

On the **Master Inverter**, **press and hold** the **tick** button,
'Start' will be displayed, **press** the **tick** button again,
'Set?' will be displayed, **press** the **tick** button again,

The Master Inverter will start a 60s checking cycle and the Slave
Inverter/Inverters will display **'Waiting'**

Once the Master has 20s left the Slave Inverter/Inverters will start their
checking cycles

Once this is complete all inverters will display **'Normal'**

Please Note

When Fox 30kW inverters are installed the system drains each battery input at the same kWh value, if there is a difference between the capacity of battery stacks, there can be a loss in inverter outputs because of depletion of battery SOC,

When doing parallel installations, all inverters in the series need to match up completely,

This means each inverter must have its own stack of batteries, equal to every other inverter in the series. If the Master has 4 x batteries, then every Slave will need 4 x batteries. The same applies to PV.

The Cable sizes and lengths are down to your discretion. As long as you follow the user manual and local electrical regulations a Fox parallel installation is straightforward.

We will need to assist you when setting up the site as there are multiple things that need to be done Online on FoxEssCloud