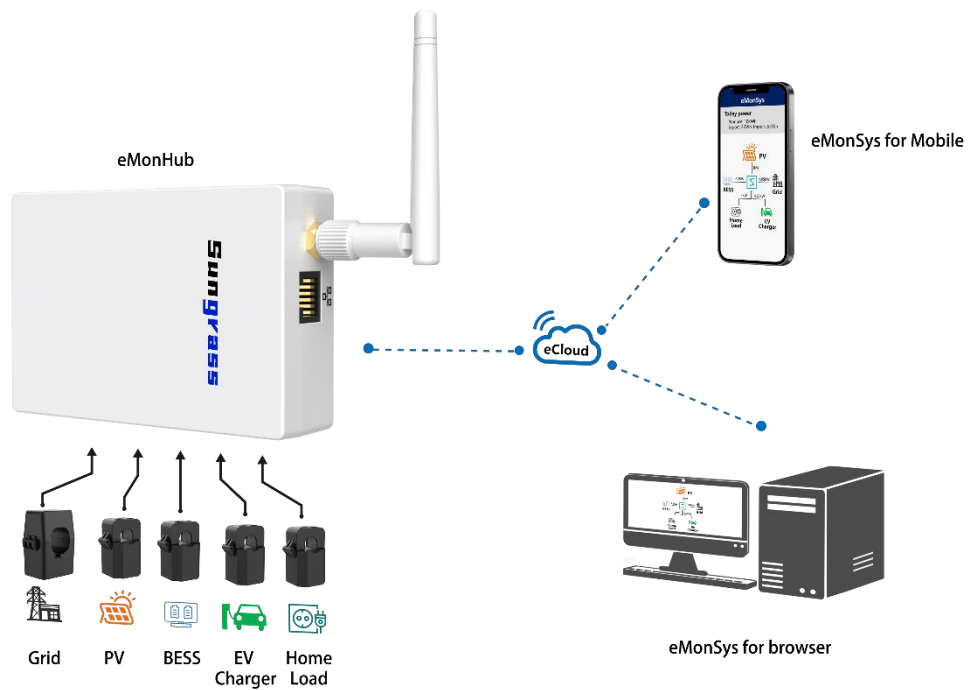


Installation Guide

For eMonHub

A smart IoT power monitor



Safety Information



It is a safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that accompany this symbol to avoid possible injury or death.

1. Read this safety instructions carefully.
2. Retain this user manual for future reference.
3. Do not install the eMonHub in environments with explosive gas or vapors; nor in damp or wet environments; nor in direct sunlight; nor where temperatures are consistently below -13° F (-25° C) or above 122° F (50° C).
4. Do not attempt to open, disassemble, or repair any of the components of the eMonHub.
5. Do not use the eMonHub in any manner other than specified in this installation guide, otherwise, the protection provided by the equipment may be impaired.
6. The eMonHub should be wired to power using 16AWG (16-18AGW), 600V, UL1015, 105° C (or higher) copper-only wires.



WARNING

WARNING indicates a hazardous situation which, if not avoided, could result in death or serious injury.

- The eMonHub works around dangerous voltage that could lead to injury or death. The installation should be performed by a skilled person such as a licensed electrician or other qualified professional in accordance with the regional electrical code where it is being installed.
- Improper installation or use of the equipment can be dangerous or even fatal. In no event shall Sun-growe be liable to you or any third party for any damages, either direct or indirect, arising from or related to any personal injury as a result of your failure to follow the safety information and instructions in this Installation Guide.
- Remove power from the electrical panel before inspecting. Wear protective eyewear and protective gloves before attempting to inspect the eMonHub system. Ensure no wiring for voltage measurement, current measurement, power, or data are frayed or have exposed conductors. Ensure there are no cracks, breaks, open, or other defects in the enclosure of the eMonHub or CT clamps.
- The eMonHub should only be used with listed CT clamps. Basic Insulation,

- use CT clamps only on insulated conductor, secured from contacting live parts.
- Ensure the eMonHub does not have power during any handling, including installation and disassembly.
 - To reduce risk of electric shock, always open or disconnect circuits from the power-distribution system (or service) of a building before installing or servicing current transformers.
 - Restrict installation of current transformers in an area where it would block ventilation openings.
 - Restrict installation of current transformers in an area of breaker arc venting. Do not install the eMonHub in any area where breaker arc venting exhaust gasses could be re-directed as a result of sub metering equipment installation.
 - Secure CT clamps and route conductors so that the conductors do not directly contact live terminals or buses.
 - The eMonHub shall not be mounted within 50.8 mm (2 in) of any live parts including primary conductors, primary terminals, and primary lugs; but excluding insulated cables. It's acceptable for the monitor to be mounted to the grounded panel box and near the neutral/ground bus bars.
 - If the eMonHub Monitor is attached to the enclosure, it shall not contact the panel interior insulation such as the material that separates the GND and LIVE bus bars.
 - The eMonHub mounting provisions shall not be attached to any energized part.
 - Voltage sensing and power supply connections to the primary voltage shall have overcurrent protection through connection to a breaker/MCB.

**FCC WARNING**

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation. Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio

communications.

However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

To maintain compliance with FCC's RF Exposure guidelines, this equipment should be installed and operated with minimum 20cm distance between the radiator and your body: Use only the supplied antenna.

Table of Contents

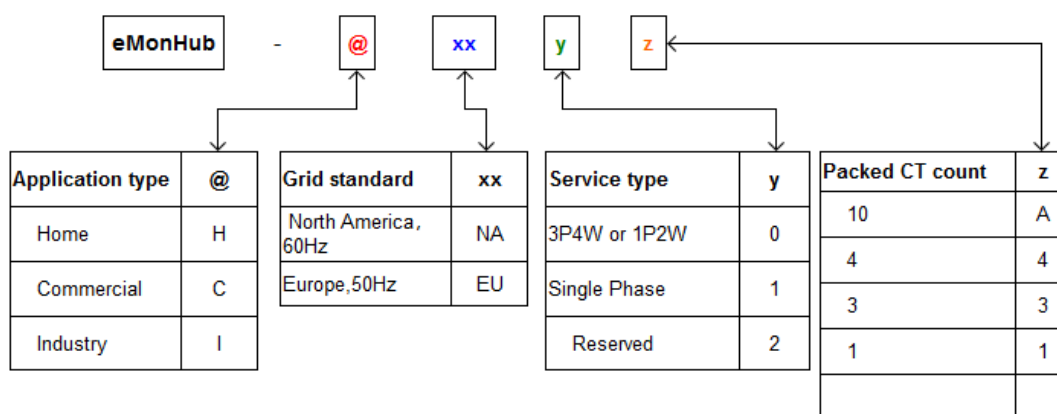
Technical Support and Assistance	5
Part Number Nomenclature	5
Terminology	5
Before you get started	6
Installation Tools	6
Packing list check	7
Know about optional accessories	7
Connection and terminals of eMonHub	8
Inlet and outlet interface.....	8
Inlet and outlet list.....	8
Hardware Installation.....	9
Connection Schematic Diagram	9
Home Application	9
Commercial Application	10
Installation Procedure	10
Step 1: Disconnect power supply and find a place to install the monitor	11
Step 2: Install CT clamps.....	11
Step 3: Prepare the internet connection.....	19
Step 4: Connect Voltage Supply	20
Step 5: Commissioning and Recover the Site	21
Set on eMonSys.....	21
Technical Specification	22

eMonHub Specifications	22
HCT-24K-V200A Specification.....	23
HCT-10B-V50A Specification	24

Technical Support and Assistance

	Email US 13058052586@163.com
	Call US +8613058052586 +8613316498553
	Wechat 57580371
	WebSupport http://www.sungrass.tech/eContact.php

Part Number Nomenclature



Terminology

Term	Definition
BESS	Battery energy storage system, including photovoltaic and

	battery hybrid system
PV	Photovoltaics
V2G	Vehicle to Grid
EV	Electric Vehicle
CT	Current Transformer
Legs	The hot line connect to appliance
Balance Load	The load is same among legs
Unbalance Load	The load is not same among legs
MCB	Miniature Circuit Breaker

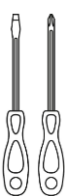
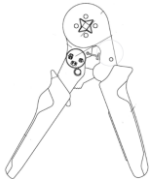
Before you get started

Before installation, make sure to disconnect power supply, the main breaker will need to be set to the off position, which will shut off all of the power. However, the service mains will remain energized and dangerous. The following may help with safe installation.

- Installation should be performed by a skilled person such as a licensed electrician or other qualified professional.
- Install in accordance with the regional electrical code where it is being installed.
- Ensure that the product specifications of the eMonHub are compatible with the system and panel type where it is being installed.
- Identify the location of service disconnect. It may be outside of the panel.
- Ensure the work environment is clean with additional lighting available.

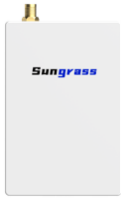
Installation Tools

The following recommended tools are generally required during the installation process.

						
Insulated gloves	Phillips and flathead screwdrivers	Protective eyewear	Alternative light source	Heat gun	Wire stripper	Crimping tool

Packing list check

Before installation, check that the following items were include with the product comfort to the model package.

						
<u>eMonHub</u>	<u>200A CT</u>	<u>50A CT</u>	<u>1000A CT</u>	<u>WiFi antenna</u>	<u>RF cable</u>	<u>Sealing ring</u>

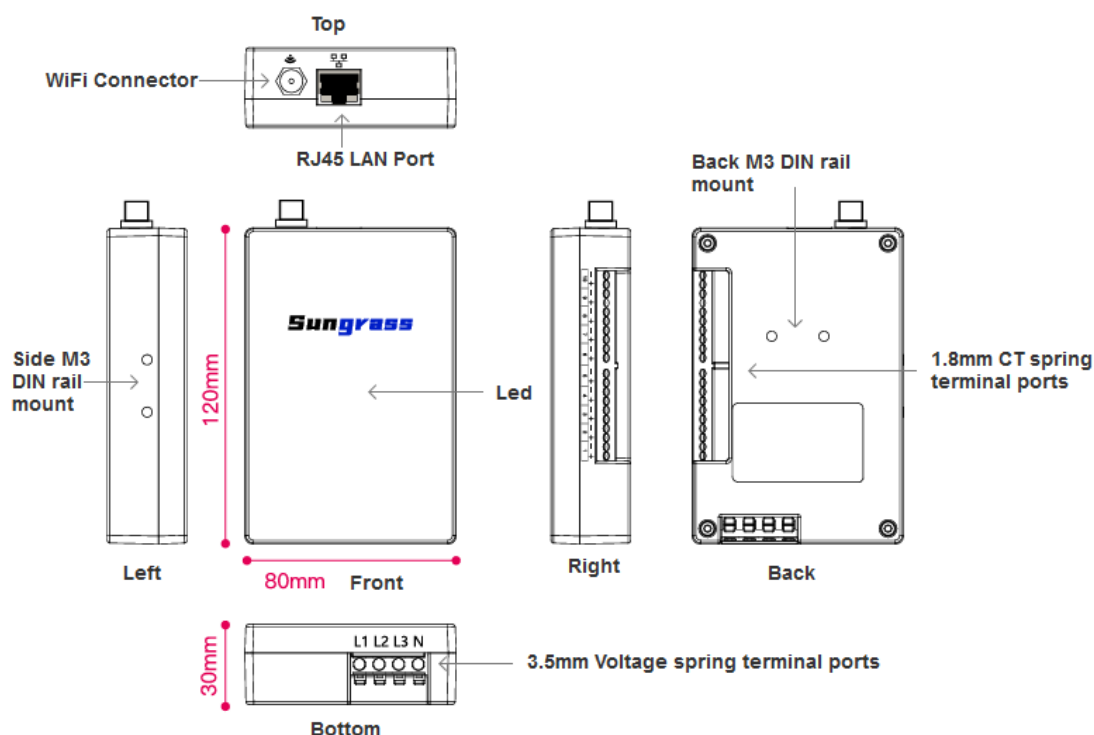
Part \ Model	HNA0A	HNA03	HEU0A	HEU04	HEU1A	Cxyz	Ixyz
eMonHub	1	1	1	1	1	1	1
200A CT clamp	2	2	3	3	1		
50A CT clamp	8	1	7	1	9		
500A CT clamp						1	
1000A CT clamp						3	
Wi-Fi antenna	1	1	1	1	1	1	1
Sealing ring	1	1	1	1	1		
RF cable	1	1	1	1	1		
Quick reference	1	1	1	1	1	1	1

Know about optional accessories

Part Number	Accessory	Description
SCT1000	1000A CT	1000A CT Sensor, output 333mV, accurate 0.5%, cable length 1.5m
SCT500	500A CT	500A CT Sensor, output 333mV, accurate 0.5%, cable length 1.5m
SCT200	200A CT	200A CT Sensor, output 333mV, accurate 1%, cable length 1.2m
SCT50	50A CT	50A CT Sensor, output 333mV, accurate 1%, cable length 1.2m
	DIN-rain bracket	Standard M3 DIN-rain bracket

Connection and terminals of eMonHub

Inlet and outlet interface



The 10 port current signal terminals are the input for current transformers (CT clamps) and each port has 2 terminals of S1 and S2, labeled on eMonhub with '+' and '-' separately.

Inlet and outlet list

Terminal	Function	Description
AC Voltage Input	Voltage input, power supply	L1: 100-277V AC, 50/60Hz, 0.041A L2/L3: 0-277V AC, 50/60Hz, < 1mA
CT Signal Input	Current sample	eMonHub-Hxxyz, eMonHub-Cxxyz Rate: 333mV, AC eMonHub-Ixxyz Rate: 1A AC
RJ45	Ethernet Communication	10/100M, IEEE802.3
RP SMA	Wi-Fi connection	IEEE 802.11 b/g/n, 2.4GHz
Installation Hole	M3 DIN Installation	Back and side DIN rail mount hole

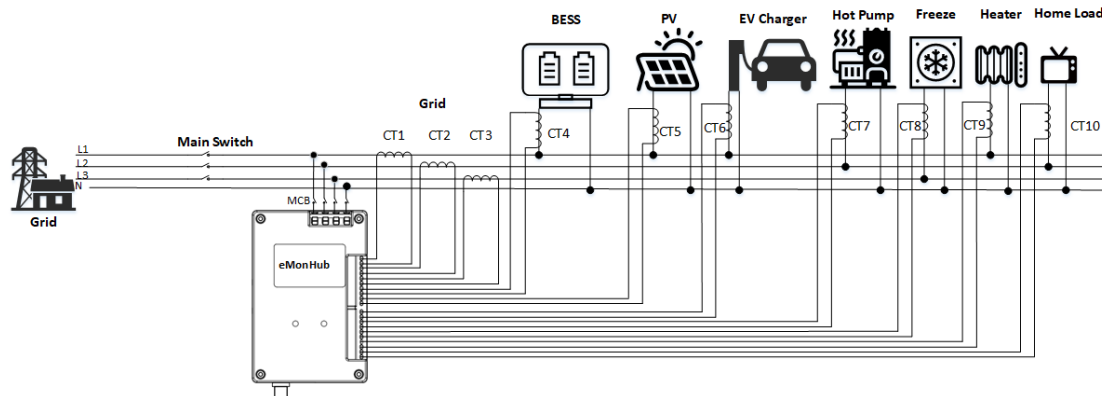
Hardware Installation

Connection Schematic Diagram

Home Application

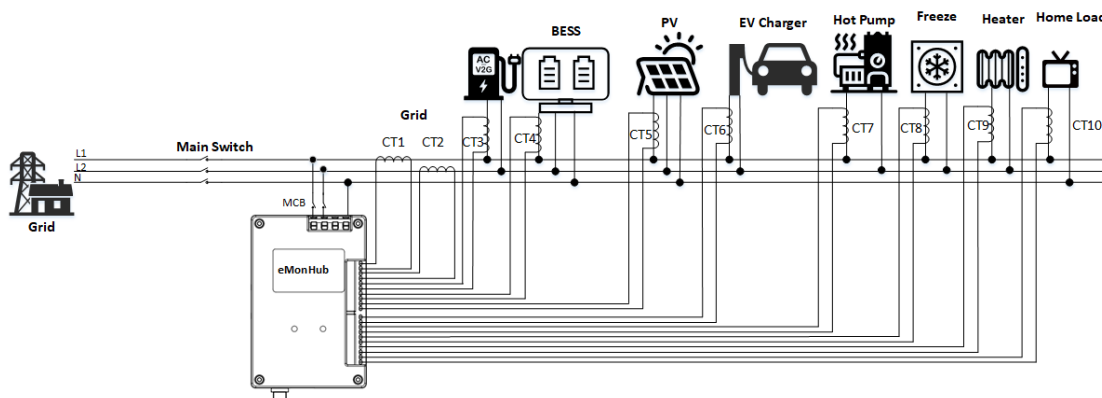
(1) In 3 phase 4 wire(3P4W) grid service

Commonly this service is used in Europe home, or America small office or buildings. The default application and connection are showed in the following figure.



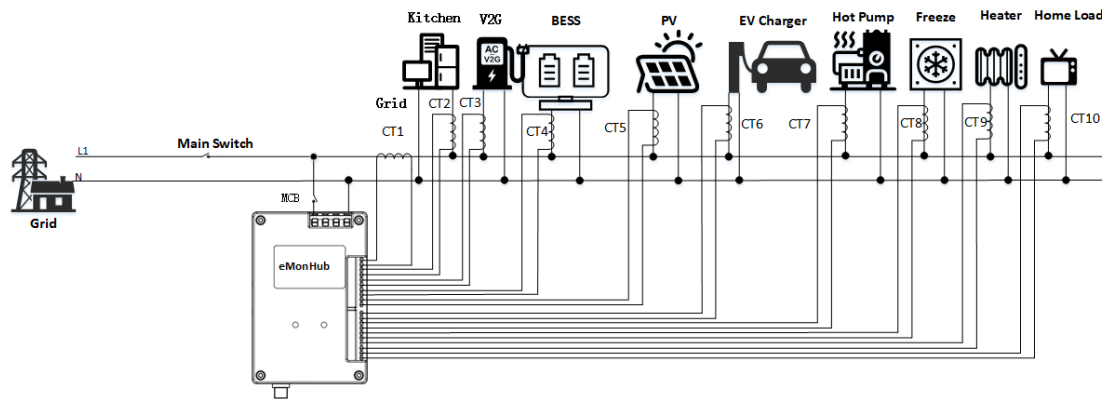
(2) In split phase service

This type of service is commonly used in home of North America. The service provides $\pm 120V$ hot wire, but 180 degree phase. For heavy load appliances, such as BESS, PV, EV charger, hot pump, Freeze and so on, which are powered with 2 leg, L1 and L2; for small load appliances, which are powered with L1 and N or L2 and N. The default application and connections are showed in the following figure.

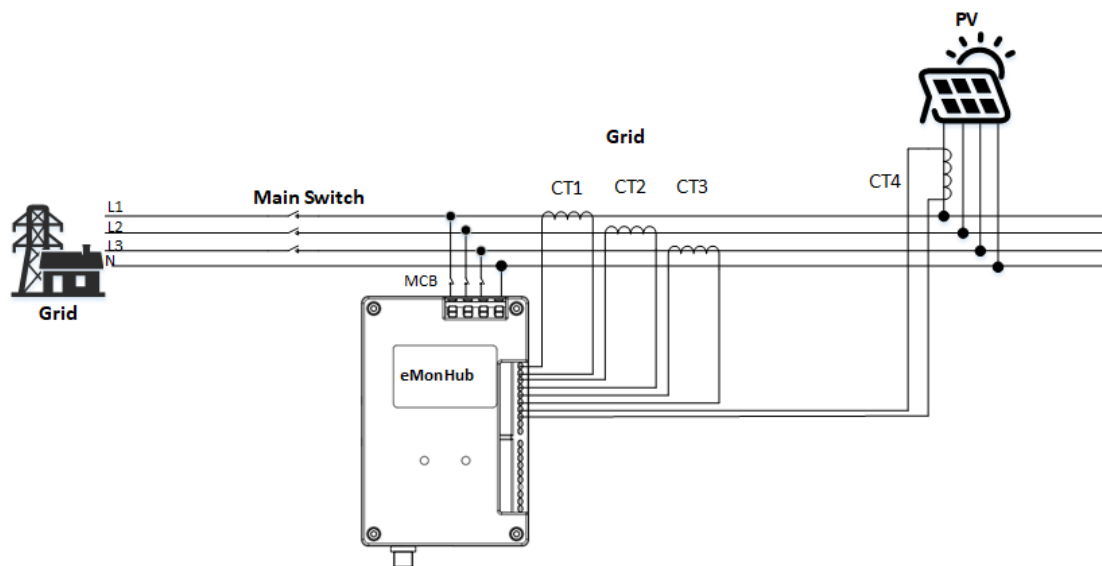


(3) In single phase service

In many area of world, it is single wire grid service system for home. The default application and connection is showed in the following figure.



Commercial Application



In commercial application, such as EV charge station, property management, small building or park, owners need to monitor grid usage and PV generation, the application and connection are showed in the above figure.

Installation Procedure

A brief instruction of the installation process.

Step1	Disconnect power supply and find a place to install the monitor
Step2	Install CT clamps according to actual usage
Step3	Prepare the internet connection to eMonHub
Step4	Connect Voltage Supply
Step5	Power on eMonHub and commissioning on eMonSys APP

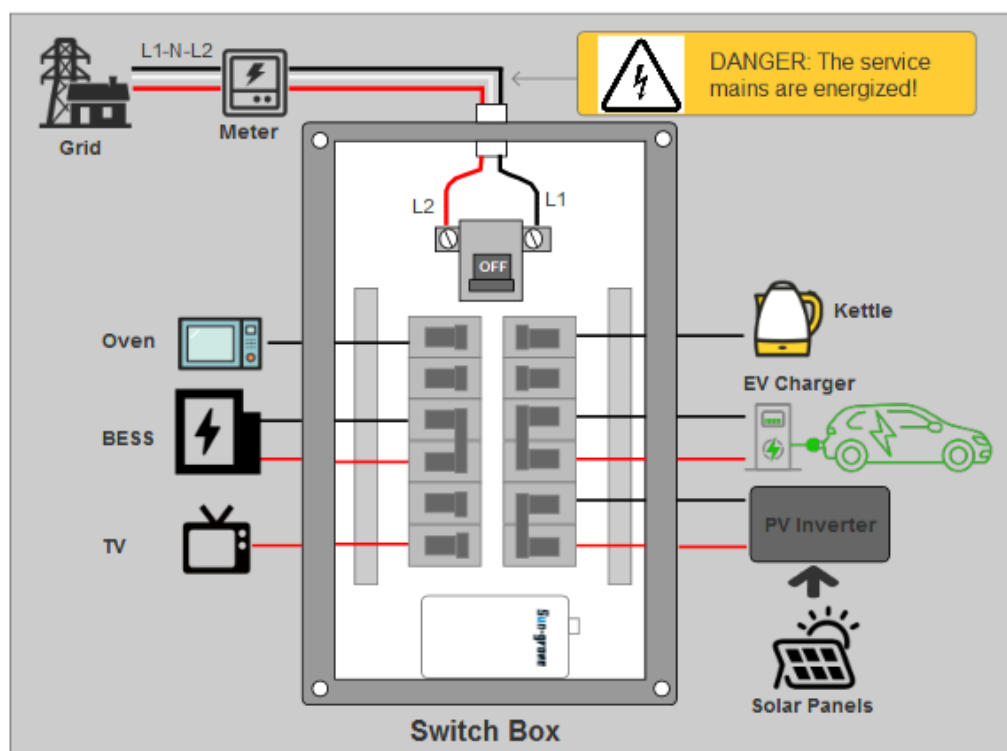
Step6	Power off, recover the site and power on to keep operation
-------	--

Step 1: Disconnect power supply and find a place to install the monitor

First, turn service disconnects and/or main breakers feeding the switch panel into the OFF position.



Note that the switch may be located outside of the switch panel in which you're installing the monitor. In some switch panel, you need to remove the cover to the panel to access the circuit breakers and the energized service mains!



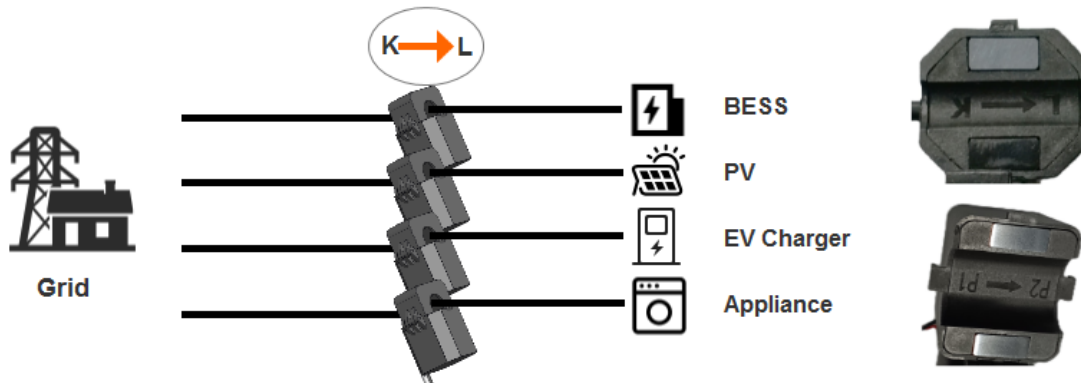
Locate a place within the electrical panel for the monitor. If the monitor is to be mounted on a DIN rail, the monitor has two threaded screw holes to attach mounting hardware using two M3 screws and lock washers (sold separately). In many American home, the logic diagram of switch panel is showed in above figure.

Step 2: Install CT clamps

2.1 General installation instruction for CT clamps

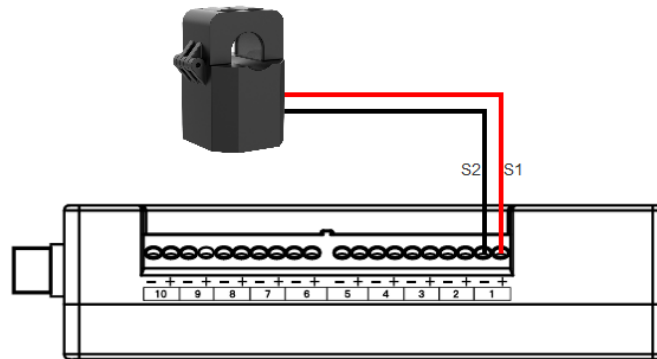
Make sure to install CT clamps on hotline, do not install it on neutral line.

Direction of all CT clamps (K->L, or P1->P2) orients towards appliances (such as BESS, PV, EV charger, Home Loads, etc.).



CT clamp terminal S1 with **red color** connects to spring terminal '+' and S2 with **black color** connects to spring terminal '-' on the monitor.

Record the CT terminal port usage arrangement on a paper for device usage settings in eMonSys APP.



How to install CT terminal to spring terminal of the monitor? The approach to connect CT harness terminal to the monitor is listed in the following figures:

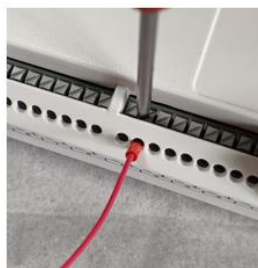
- (1) Locate the terminal port to connect;
- (2) Press the terminal's spring down completely with flathead screwdriver;
- (3/4/5) Insert harness terminal into terminal port completely;
- (6) Release flathead screwdriver;



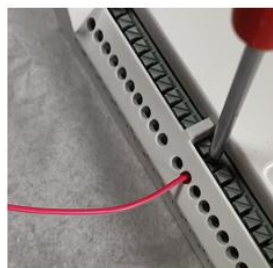
Step-1

Step-2

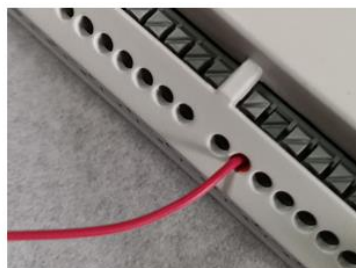
Step-3



Step-4



Step-5



Step-6

Preferably, the default usage arrangement of terminal ports, embedded in factory software setting, is set as the following table, but users could customize the arrangement according to actual usage and CT clamp installation.

Grid Service Type		Single Phase	Split System	3 Phase 4 Wire(3P4W)		
Model		HEU1z	HNA0z	HEU0z	Cxyz	Ixyz
Port1	Usage	Grid	Grid	Grid	Grid	Grid
	CT Range	200A	200A	200A	1000A	3000A
	Multi	1	1	1	1	1
	Install position	On L(L1/L2/L3)	On L1	On L1	On L1	On L1
Port2	Usage	Kitchen	Grid	Grid	Grid	Grid
	CT Range	50A	200A	200A	1000A	3000A
	Multi	1	1	1	1	1
	Install position	On L(L1/L2/L3)	On L2	On L2	On L2	On L2
Port3	Usage	V2G Charger	V2G Charger	Grid	Grid	Grid
	CT Range	50A	50A	200A	1000A	3000A
	Multi	1	2	1	1	1
	Install position	On L(L1/L2/L3)	On L1	On L3	On L3	On L3
Port4	Usage	BESS	BESS	BESS	PV	
	CT Range	50A	50A	50A	500A	
	Multi	1	2	1	3	
	Install position	On L(L1/L2/L3)	On L1	On L1	Any hot line	
Port5	Usage	PV	PV	PV		
	CT Range	50A	50A	50A		
	Multi	1	2	1		
	Install position	On L(L1/L2/L3)	Any hot line	Any hot line		
Port6	Usage	EV Charger	EV Charger	EV Charger (include V2G)		
	CT Range	50A	50A	50A		
	Multi	1	2	1		
	Install position	On L(L1/L2/L3)	Any hot line	Any hot line(On L1 if V2G)		
Port7	Usage	Hot Pump	Hot Pump	Hot Pump		
	CT Range	50A	50A	50A		
	Multi	1	2	1		

	Install position	On L(L1/L2/L3)	Any hot line	Any hot line		
Port8	Usage	Freeze	Freeze	Freeze		
	CT Range	50A	50A	50A		
	Multi	1	2	1		
	Install position	On L(L1/L2/L3)	Any hot line	Any hot line		
Port9	Usage	Heater	Heater	Heater		
	CT Range	50A	50A	50A		
	Multi	1	2	1		
	Install position	On L(L1/L2/L3)	Any hot line	Any hot line		
Port10	Usage	Home Load	Home Load	Home Load		
	CT Range	50A	50A	50A		
	Multi	1	1	1		
	Install position	On L(L1/L2/L3)	Any hot line	Any hot line		



Take notes to document the CT installation and usage arrangements for all current terminal ports on a paper. After finish hardware installation, users can customize the CT settings in the eMonSys app based on the actual installation.

2.2 Special attentions to install CT clamps for grid measurement

Installation position, the CT clamps should be installed on main and in front of all other appliance connections.

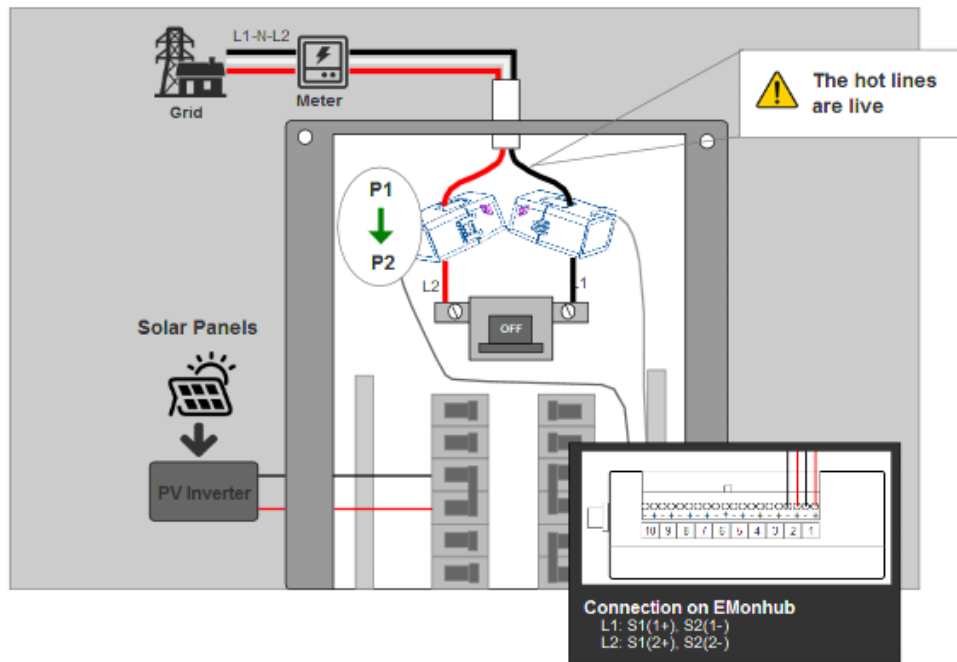
In 3 phase grid service, the CT clamps terminal should only be connected to terminal port 1~3 separately on eMonHub;

In split grid service, the CT clamps terminal should only be connected to terminal port 1~2 separately on eMonHub;

In single phase grid service, the CT clamp terminal should be only connected to terminal port 1 on eMonHub.

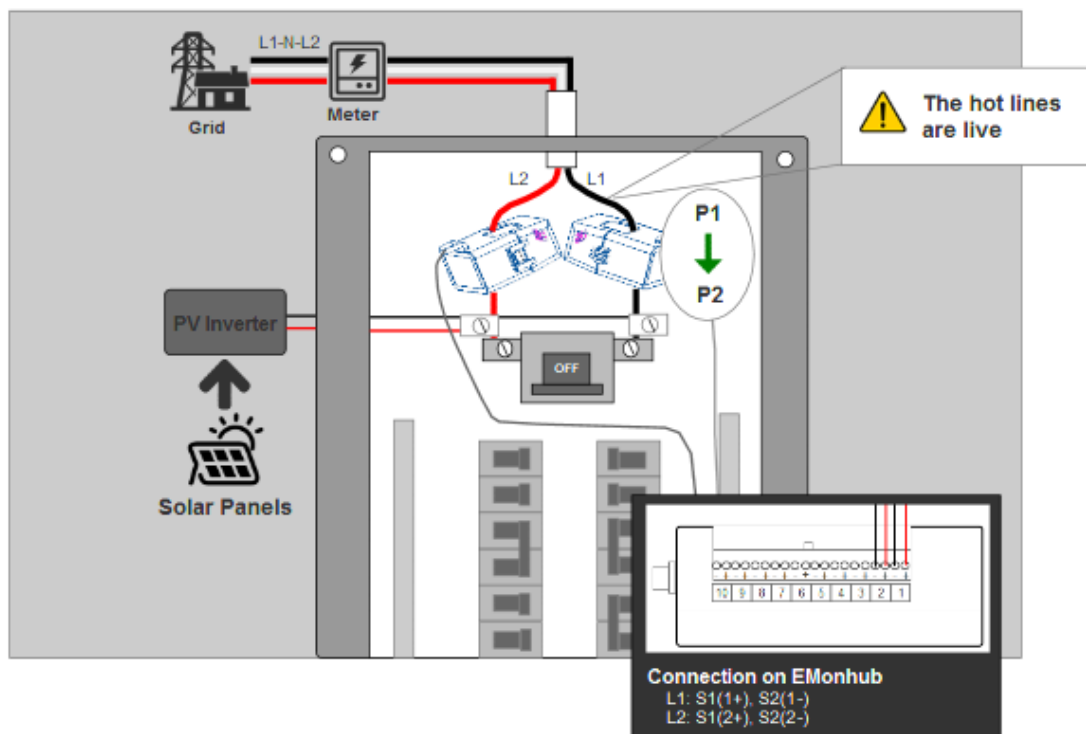
There are two positions for photovoltaic installation, within main break or outside main break. No matter what the case is, the CT clamps for grid measurement should be installed on main and in front of photovoltaic.

2.2.1 Photovoltaic installed within main break



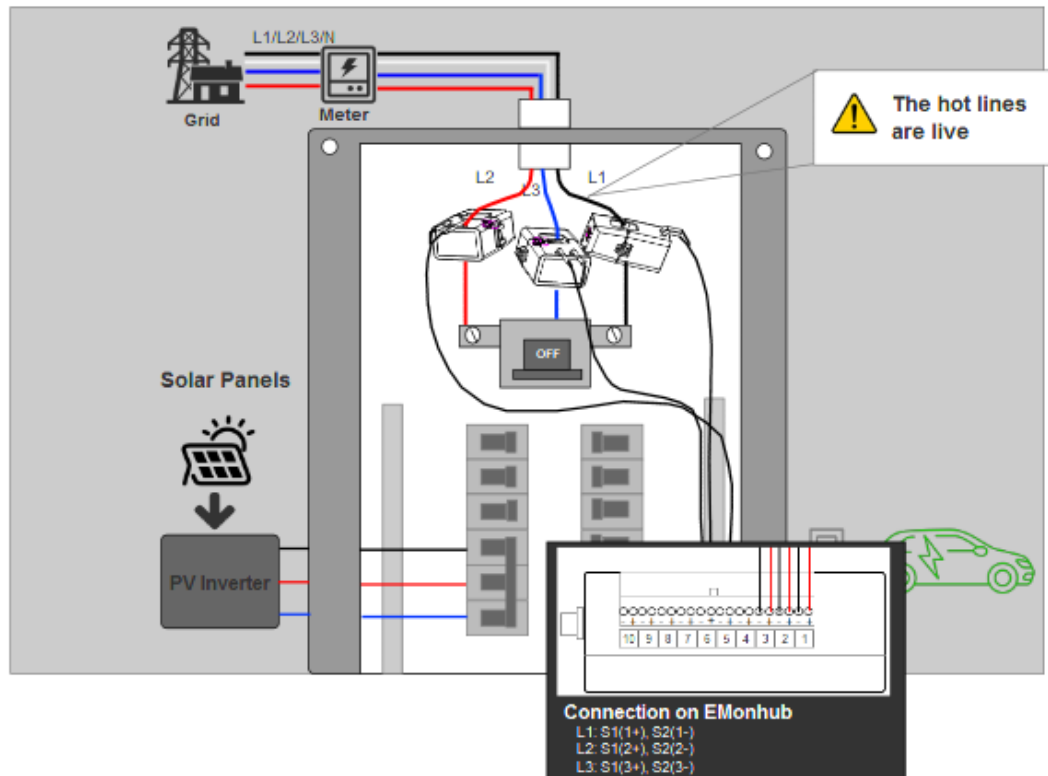
The service main are always live, so it's carefully to install the CT clamp on the main and keep away from live parts. For split phase grid service, CT clamps of grid measurement are installed on L1 and L2 separately.

2.2.2 Photovoltaic installed outside of main break



2.2.3 3 Phase 4 wire (3P4W) grid service

CT clamps of grid measure are installed on L1, L2, and L3 separately.

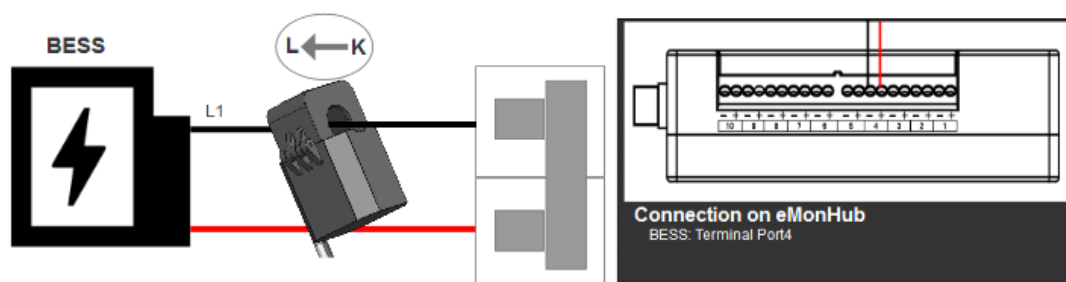


Accurate measurement, in multi-wire power grid system, the current and power may be different among the wires, so it is necessary to install one CT clamp for each phase wire to get accurate measure data.

2.3 Special attention to CT clamp for BESS measurement

2.3.1 Split grid service

For balanced BESS or V2G Charger with 2 legs, it is feasible to get accurate measurement with only one CT clamp and **the CT clamp must be installed on leg L1(for bi-direction power detection)**, with multiple factor setting 2 in eMonSys APP. The direction of CT clamp is forward to BESS/V2G.

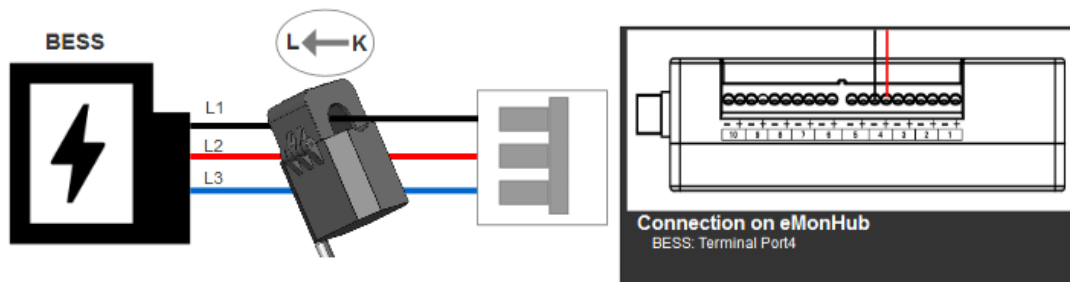


For unbalance BESS or V2G with 2 legs, it is better to install 2 CT clamps for each leg to get accurate power and energy measurement, with multiple factor 1 for each leg in eMonSys app.

2.3.2 In 3 phase 4 wire (3P4W) grid service

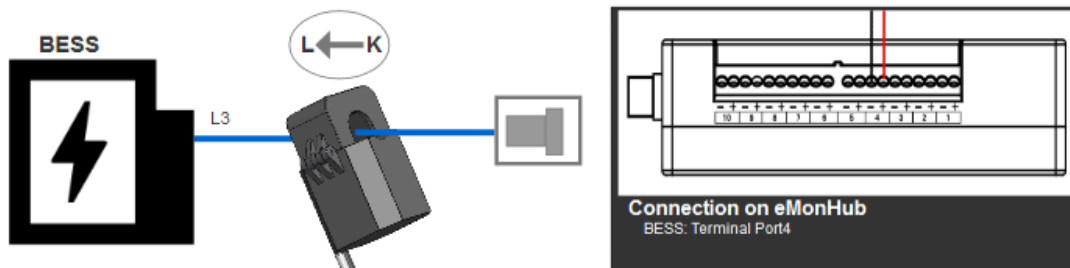
(1) Balanced BESS/V2G with 3 legs

It is feasible to install one current transformer on phase L1 and with multiple factor of 3 in eMonSys APP. Direction of CT clamps is forward to BESS. However, **the CT must be install on phase L1** for power direction detection.



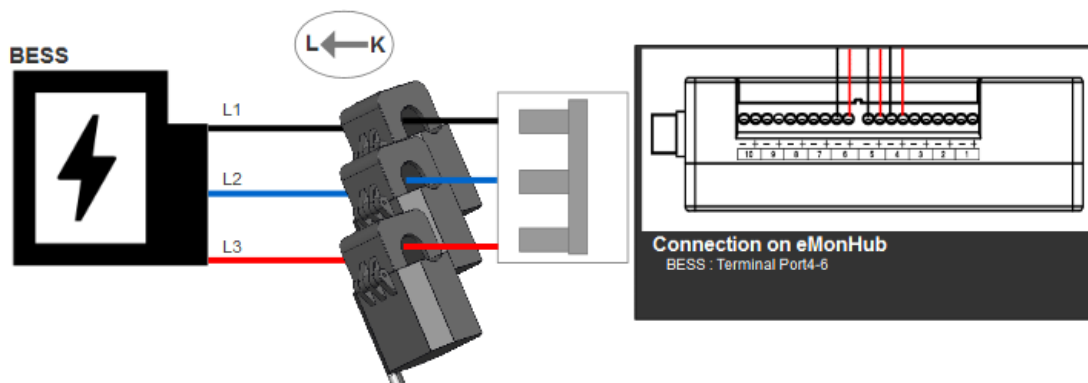
(2) Single leg BESS/V2G

To measure single leg BESS/V2G (power supply with single phase) in 3 phase system, **it is necessary to set which phase line the CT clamp is installed in eMonSys APP**, otherwise eMonHub cannot recognize automatically the install position and power direction at once to get the accurate power and energy value.

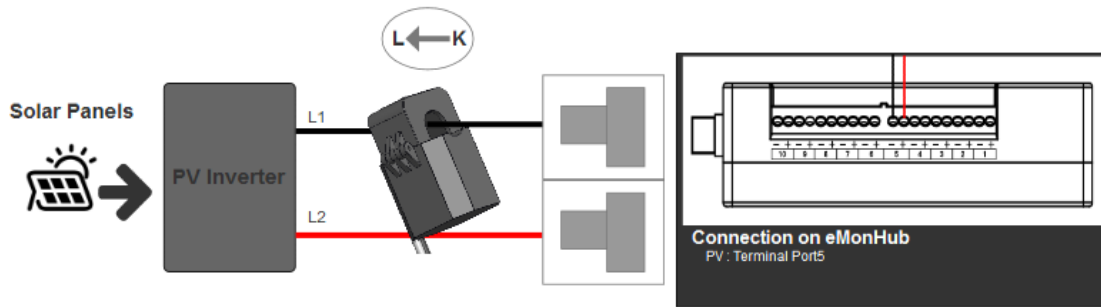


(3) Unbalanced BESS/V2G with multiple legs

However, the load among legs for some appliance may be different, so it need to install one CT clamp for each leg to get accurate power and energy measurement with the multiple factor of 1 for each leg in eMonSys APP.



2.4 Special attention to install CT clamp for PV measurement

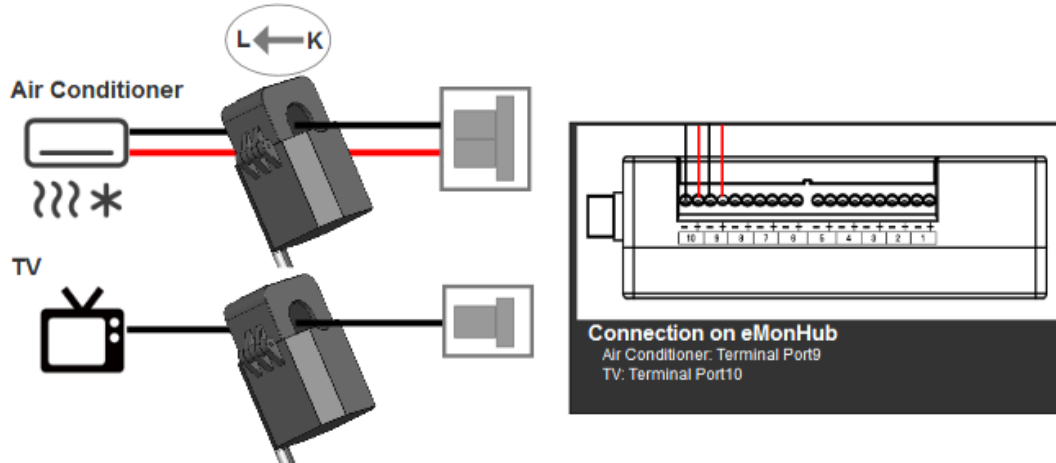


Usually, Load on PV legs is balance, so it is feasible only to install one CT clamp for PV measure and the multiple factor is set to 2(for 2 leg PV) or 3(for 3 leg PV)in eMonSys APP, but the CT direction is forward to PV appliance.

2.5 CT clamp installation for measuring other appliance

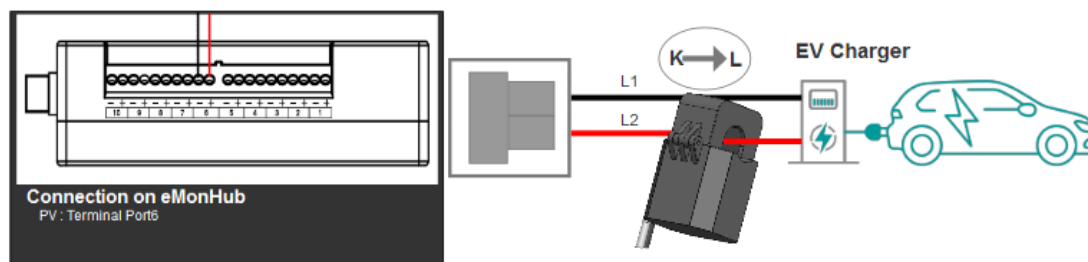
2.5.1 CT clamps for general loads

The load of each leg is same for many appliance in multiple phase grid service, such as hot pump, freeze, and EV charger, etc. So it is feasible to install only one CT clamp to get accurate measurement with multiple factor set 2(with 2 hot leg) or 3(with 3 hot leg) in eMonSys APP. The CT clamp could be install on any hot leg for loads and eMonHub would recognize the installation position automatically.



2.5.2 EV Charger

To measure the EV charger with only one current transformer, the CT could be installed on any leg, and multiple factor is set to 2(2 hot leg) or 3(3 hot leg) on eMonSys APP.



Step 3: Prepare the internet connection

3.1 Connection with Wi-Fi

Wi-Fi antenna could connect to RP SMA Connector on the monitor directly or by coaxial extension cable, it is showed as following figure. An RF extension cable can be used to increase the distance of the antenna for easier installation in switch box. One end of the RF extension cable connects to the eMonHub Wi-Fi Connector, while the other end connects to the Wi-Fi antenna.

3.2 Connection with Ethernet

Run a Cat5 or higher Ethernet cable with an RJ45 connector from a router, switch, or modem to the electrical panel.

Communication by Ethernet	Communication by Wi-Fi

If both Ethernet and Wi-Fi are connected simultaneously, eMonHub will prioritize Ethernet communication.

RP SMA Connect Instruction	Wrapped with heat shrink tubing



The steps to connect RP SMA connector are showed in the following picture.

Step1, install the flower washer.

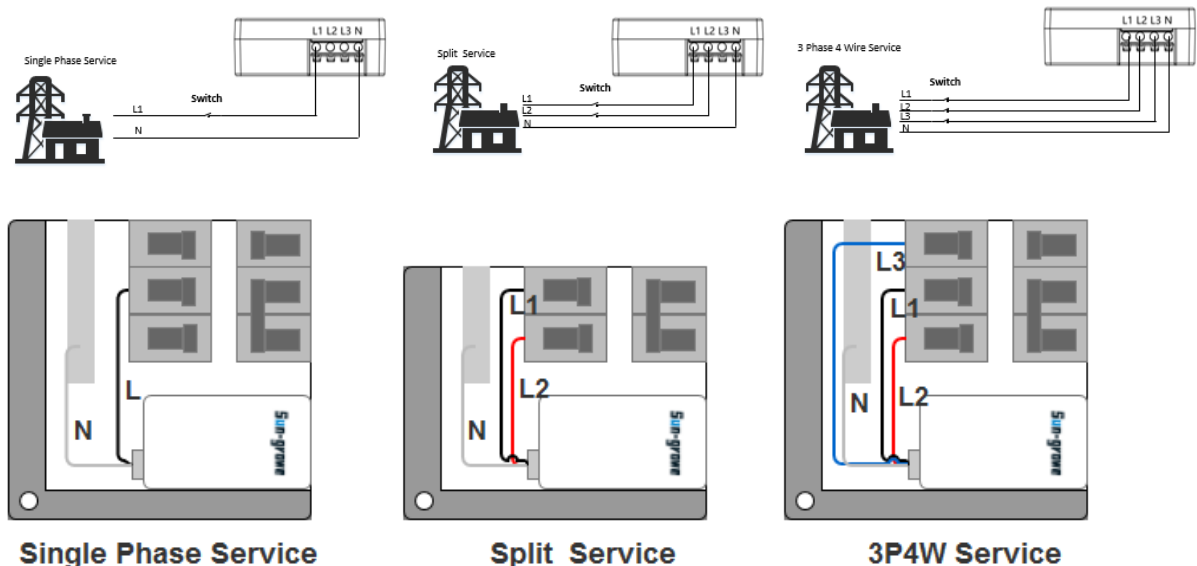
Step2, install the spring washer.

Step3, install the nut.

For secure connections, the RF cable and Wi-Fi antenna are typically wrapped with heat shrink tubing after being connected, and then heated by heat gun to provide insulation and protection.

Step 4: Connect Voltage Supply

For 3 type of grid service, the voltage connection schematic diagram is showed in the following figure.



2.4.1 Common American houses , Split Phase $\pm 120V$

Secure the **White (N)** wires from the terminal to the neutral bus bar. Secure the **Black (L1)** and **Red (L2)** wires from the terminal to each of the hot leads.

2.4.2 Common European 3-phase homes or Common American commercial systems (With neutral)

Secure the **White (N)** wire from the wire harness to the neutral bus bar. Secure the **Black (L1)**, **Red (L2)**, and **Blue (L3)** wires from the harness to each of the hot leads.



(1) Rating voltage (L-N, between phase and neutral) should not be higher than 277V AC.

(2) The connection points of the voltage supply need to be protected by a MCB.

2.4.3 Common European Single-phase homes

Secure the **White (N)** wires from the wiring harness to the neutral block.
Secure the **Black (L1)** wire from the harness to the hot lead.

Step 5: Commissioning and Recover the Site

When finish all CT clamps, internet, voltage supply connection, then take photos of the installation in case you need to contact support.

Power on eMonHub and trial run it. During the trial run, the status of the indicator lights(LED) can be observed to make a preliminary determination of whether the operation is normal. The led indication is list in the following table.

Led Color	Status	Indication
Red	On, always	Error detected
Red	On 5s, off 1s	No user configure set
Blue	On 5s, off 1s	No internet connection, cannot get IP
Blue	On 3s, off 1s	Got IP, but cannot connect to eCloud
Blue	On 1s, off 1s	Exchange message to eCloud

When eMonHub exchange message to eCloud successfully, users could watch the live data in eMonSys APP. If the actual CT usage is different with default config, users could customize the settings during trial run in eMonSys according to actual installation.

After hardware commissioning, power off and restore the installation site to its previous condition, including covering the electrical box with its safety cover plate, locking it, labeling it, and restoring the power supply.



Note: If ethernet is connected for eMonHub, the eMonhub could get ip address from gateway and connect to eCloud automatically. If a Wi-Fi connection is selected, it is necessary to set connecting SSID and PSK for eMonHub using the eMonSys APP on mobile phone before commissioning. Of course, before or after the installation of the eMonHub, an Ethernet connection can be used first to set up and save the Wi-Fi connecting SSID and PSK on the eMonSys via a web browser, and then only the Wi-Fi connection can be used after the installation. For detail operation, please refer to eMonSys user manual.

Set on eMonSys

Step 1: Get the APP

Use your phone's camera to scan the unique QR code on invite-card included in the gift box. Scanning QR code will download the eMonSys app from the Google Play or eCloud of Sun-growe and initiate the eMonHub setup or

commission process. If you don't have an account, you'll be prompted to create one.

Users can also access the eMonSys app via a web browser for device settings, account management, and power monitoring.

Additionally, if you plan to connect the eMonHub to the internet via Wi-Fi, use your mobile phone to check the Wi-Fi signal strength near the home's electrical panel. Weak or no signal may require a Wi-Fi extender or an Ethernet connection for proper eMonHub functionality.

Step 2: Settings in eMonSys

To take eMonSys configure, please download eMonSys user manual from resource on eCloud for reference. The download link is list in invite-card

Technical Specification

eMonHub Specifications

Measurement	
Current	10 channel ports
Collect Value	V, A, kW, kWh, Hz, kVA, kVA _r , Power Factor
Current transformer input	Model Hxyz, Cxyz Rate voltage: 333 mV AC Model: Ixyz Rate current: 1A
Accuracy	1%
ELECTRICAL	
Nominal Input Voltage	Model Hxyz, CEUyz, IEUyz
	L1: 100-240Vac LN
	L2: 0-240Vac LN
	L3: 0-240Vac LN
	Model: CNAyz, INAyz
	L1: 100-277Vac LN
	L2: 0-277Vac LN
	L3: 0-277Vac LN
Nominal Frequency	50 or 60 Hz
Operating Power Consumption	5 Watts maximum
Supported System Services	Single phase, 2-wire systems (Up to 240V LN)
	Split phase, 3-wire systems (Up to $\pm 120V/240V$ LN/LL)

	3P4W Wye systems with earthed (TN or TT) neutral (Up to 277V/480V LN/LL)
Overvoltage Protection	Category III

MECHANICAL AND MOUNTING

	W: 120mm
Dimensions	L: 80mm
	H: 31.5mm
Weight	180g
Operating Ambient Temperature	-25~50℃ (-12~122°F)
Storage Ambient Temperature	-40~75℃ (-40~167°F)
Relative Humidity	≤90%, none condense
Installation	DIN-Rail Mount

COMMUNICATIONS

Communications	Wi-Fi 2.4GHz, IEEE 802.11 b/g/n
	Ethernet, 10/100M Base-T, IEEE 802.3
Protocol	MQTT, Rest API, Modbus TCP

REGULATORY

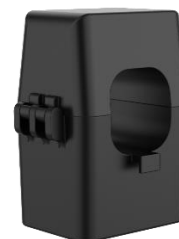
Safety	IEC 61010-1
	Conform to UL 61010-1(Test Report)
CE	CE-EMC,CE RED
FCC	FCC Part 15B, FCC Part 15C
RoHS	CE-RoHS

General

Warranty	1 year
User Interface	eMonSys Apps for Browser and Android
Casing Material	FRABS

HCT-24K-V200A Specification

Rate primary current	200A
Rate secondary voltage	333mV
Isolation Voltage	4000V
Cable Length	1.2m
Inside diameter	24mm
Dimensions	64.5×52×41mm
weight	175g
Accuracy	1%
Operating Ambient Temperature	-30~75℃
Storage Ambient Temperature	-40~80℃



Relative Humidity	≤90%, no condense
Rated Frequency	50/60 Hz
Installation	Indoor, dry location

HCT-10B-V50A Specification

Rated primary current	50A
Rated secondary voltage	333mV
Cable Length	1.2m
Inside diameter	10mm
Dimensions	39.8×28.5×26.5mm
Accuracy	1%
Weight	80g
Operating Ambient Temperature	-30~55℃
Storage Ambient Temperature	-40~80℃
Relative Humidity	≤90%, no condense
Rated Frequency	50/60 Hz
Installation	Indoor, dry location

