

AmpoHub User Manual

Model: AmpoHub-BI

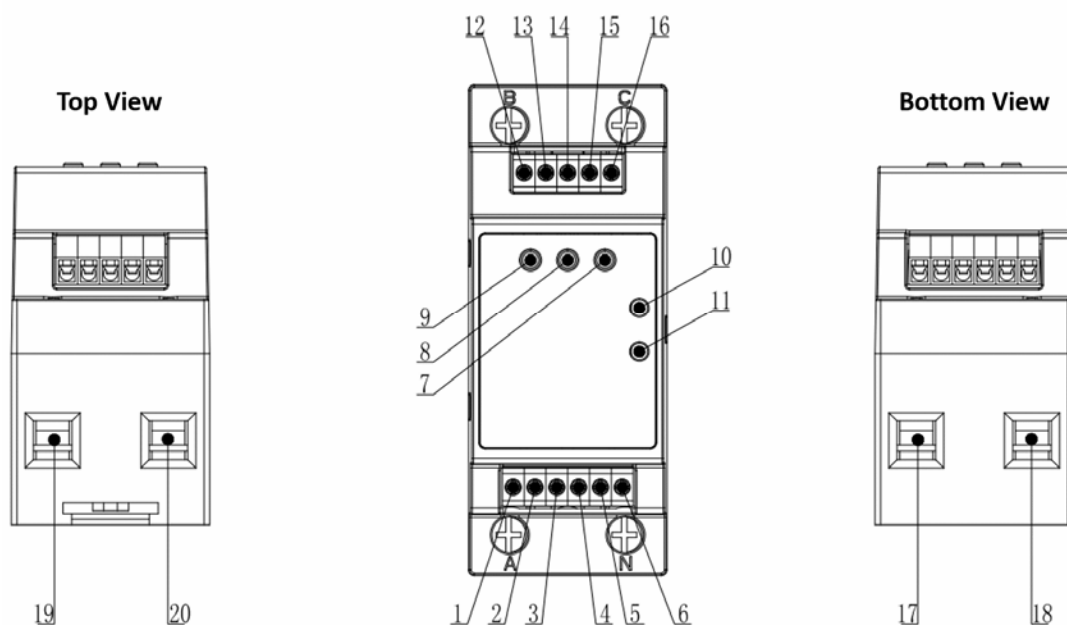
AmpoHub Product Overview

The AmpoHub is a power monitoring device and Internet of things (IoT) gateway suitable for low voltage electricity distribution systems. The AmpoHub is mounted on a standard DIN rail inside an electrical distribution panel and may be used to measure single-phase or three-phase power consumption within the panel. Measurement is done using current transformers (CTs) which are connected to the AmpoHub device. Data may be stored locally in the AmpoHub or transmitted to the cloud using a WiFi network.

Use Cases

- Monitor power consumption of entire distribution panel (mains)
 - Examples: homes, hotel rooms, retail shops
- Monitor power consumption of specific equipment (branch level)
 - Examples: split unit & VRF air conditioning, single/three phase motors
- Monitor power consumption of specific spaces (branch level)
 - Examples: corridor lighting, sublet office space

AmpoHub Connector Functions



Number	Label	Description
1	IA+	ChannelA CT connector +
2	IA-	ChannelA CT connector -
3	IB+	ChannelB CT connector +
4	IB-	ChannelB CT connector -
5	IC+	ChannelC CT connector +
6	IC-	ChannelC CT connector -
7	KEY_PWR	Power on/off when long press for 3s
8	KEY_Func	Reservedfor future use
9	KEY_RST	Reset configuration to default when long press for 3s
10	LED_PWR	ON: green color; OFF: red color
11	LED_STATUS	WiFi transmission status
12	Rvcc	Reservedfor future use
13	Reserved	Reservedfor future use
14	Rgnd	Reservedfor future use
15	Rb	Reservedfor future use
16	Ra	Reservedfor future use
17	UA	Channel A voltage input,&Power supply for AmpoHub
18	UN	Neutral Line port(must connect)
19	UC	Channel C voltage input
20	UB	Channel B voltage input

AmpoHub ProductSpecifications

- Power Supply: 90-285V, 50/60Hz
- Working temperature: -20°C to 50°C
- Application CPU: MT7688AN
- RAM: 128MB
- FLASH: 32MB
- Operating System: OpenWRT
- Connectivity:
 - ◆ WiFi 2.4G
- Sampling Rate: 1Hz by Default, adjustable
- Measurement capability:
 - ◆ Number of Channels: 3
 - ◆ Data measured (each channel): Current, Voltage, Power, Energy, Power Factor and Frequency.

AmpoHub Installation Instructions

1. Shut off power in the electrical panel
2. Check for spare miniature circuit breakers (MCBs). AmpoHub connects to a single MCB for power. Install a new MCB if no spares are available.
3. Mount AmpoHub onto the 35mm DIN rail in the electrical panel. The mounting process is identical to mounting miniature circuit breakers. The AmpoHub occupies 2 slots (i.e., the size of double-pole MCB).
4. Connect a wire from the Live Line (via spare MCB) to AmpoHub Channel A (ref 17). This Live Line powers the AmpoHub and provides a voltage measurement for channel A that being monitored.
5. (optional, if measure more than one circuit power consumption) Connect a wire from the live line (where the monitored circuit is connected to) to AmpoHub Channel B and C (ref 20 and 19), these two wires enable AmpoHub to measure the voltage on the circuit that connects to Channel B and Channel C.
6. Connect a wire from the Neutral Line to Ampohub Neutral Line port (ref 18).
7. Connect the Current Transformer (CT) to AmpoHub's CT port #A on the front face of the device (ref 1 and 2)
8. (optional, if measure more than one circuit power consumption) Connect the Current Transformer (CT) to AmpoHub's CT port #B (ref 3, 4) and #C (ref 5, 6) on the front face of the device
9. Clamp the CT(s) around the wire that is to be measured
10. Turn on power in the electrical panel
11. Follow the network setup guide to connect the AmpoHub to the Internet

FCC statement

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

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

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.

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body