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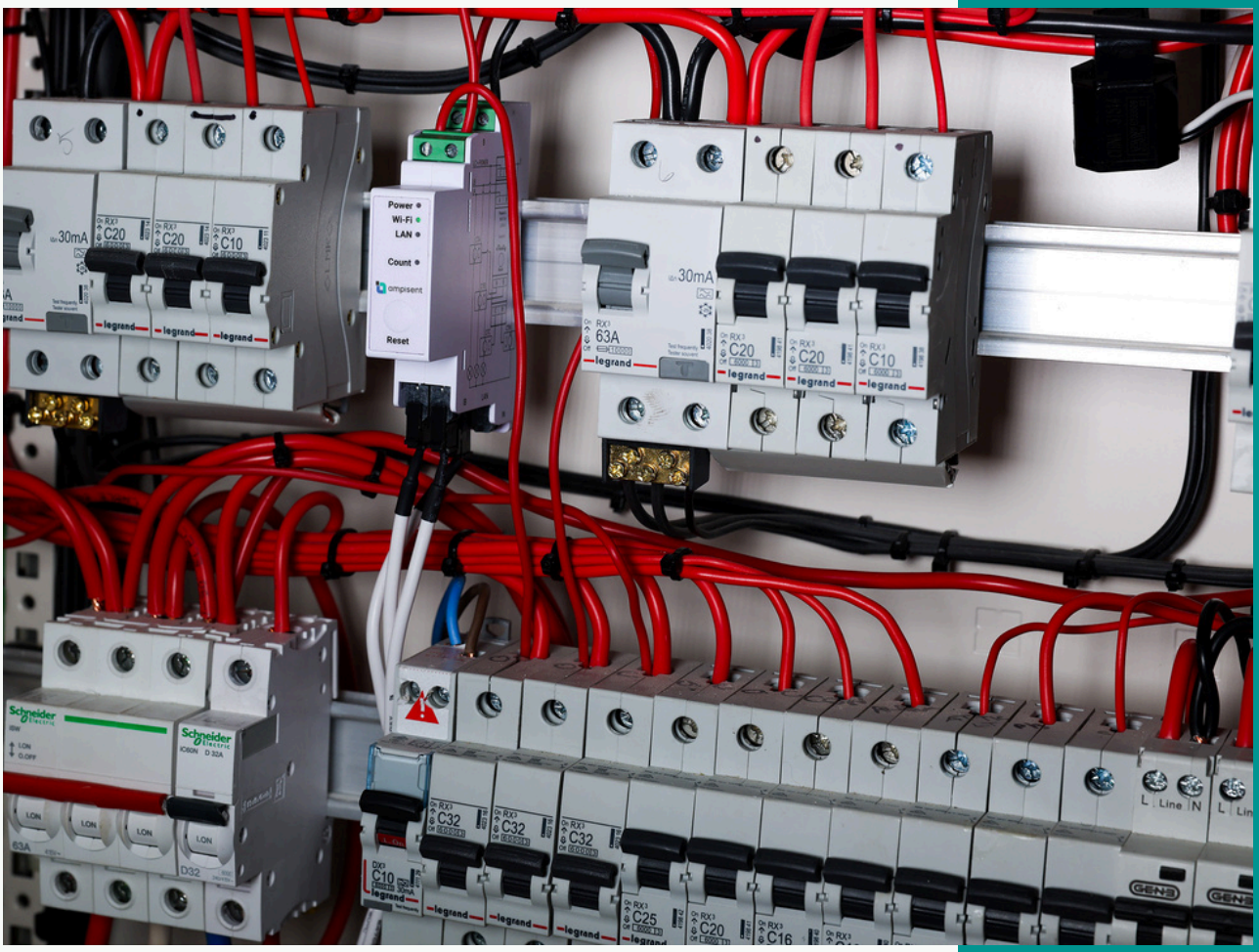
Ampisent PowerPro 3PH Installation Guide

REAL TIME POWER MONITORING SUPPORTS DECISION MAKING

In today's energy-conscious world, efficient power management is not just an option-it's a necessity.

Ampisent, a cutting-edge power monitoring solution designed to transform how businesses understand and optimise energy usage.



Ampisent provides real-time insights and analytics, enabling you to monitor energy flow, detect inefficiencies, and reduce costs with precision. Whether you're looking to enhance operational efficiency, achieve sustainability goals, or simply cut down on energy expenses, Ampisent empowers you with the tools to make informed decisions and take control of your power consumption.

Real Time Monitoring

Alerting

IIoT

SaaS

Mobile App

Dashboard

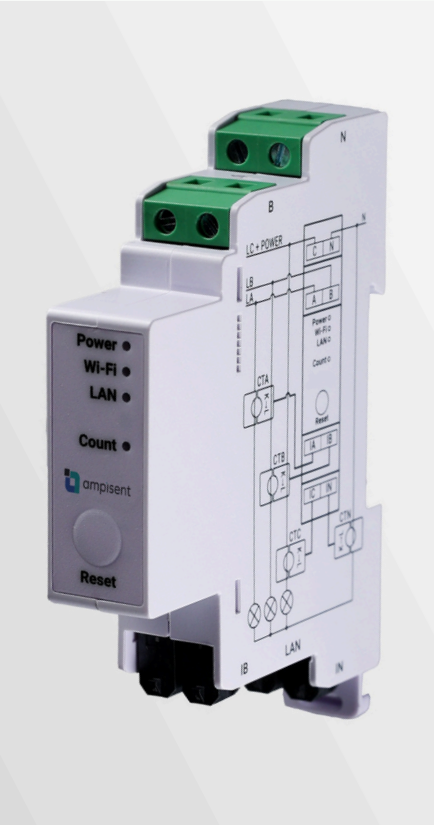
Highlights

- End to end hardware and software solution
- Lower cost
- Easy installing / Retrofitting
- Real time
- High data resolution (seconds)
- Easy system integration

Ampisent PowerPro 3PH

Ampisent PowerPro 3PH (Powered by Shelly) is a DIN rail mountable three-phase energy meter. It provides professional integrators with additional options for end-customer solutions. Ampisent Power Pro 3PH reports accumulated energy as well as instantaneous voltage, current, and power factor per phase in real-time.
Key features include:

- can measure up to 120A per phase and the neutral
- 4 quadrant measurement with multiple connection types
- Accuracy Class B active energy (Compliance with IEC 62053-21 based on manufacturer testing)
- Photovoltaic ready
- Phase sequence error detection (option)
- Optical pulse indication of energy usage
- Measurement accuracy to 1%
- Stores data in non-volatile memory that can be retrieved for a period of up to 60 days in 1-minute intervals
- Package includes 3 pieces of 120A Current Transformers



Funcitonalities

Rich Measurement

Capacitive and inductive load types of active imported and exported energies.

Accuracy class B

has a measurement accuracy of 1%.

Wifi, LAN, Bluetooth

MQTT, inbound and outbound WebSocket, UDP, mTLS support.

Power Monitoring

Monitors mono-phase electrical systems with up to 3 points simultaneously.

Scripting Functionalities

Ampisent PowerPro 3PH fully supports mjS scripting, allowing you to create further features and functionalities.

MODBUS Support

Allows for easy and fast deployment in existing industrial installations.

1. Pre-installation preparation

Tools required

- Flathead screwdriver
- Phillips screwdriver
- Wire strippers
- Multimeter (optional, for verification)

Safety precautions

- Ensure the power supply to the installation area is turned off before starting the installation.
- Verify that no electrical current is present using a multimeter.
- Use appropriate personal protective equipment (PPE).

Device electrical interfaces

Inputs

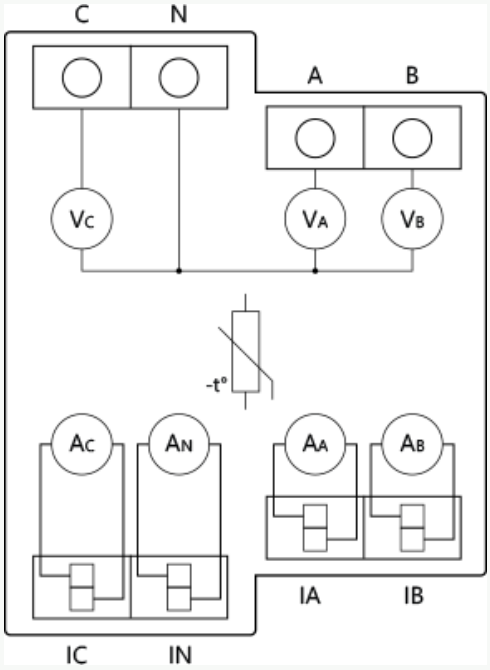
- 4 line inputs on screw terminals: 3 L and 1 N
- 4 current transformer inputs: 3 for L current measurements and 1 for N current measurement

Ethernet port

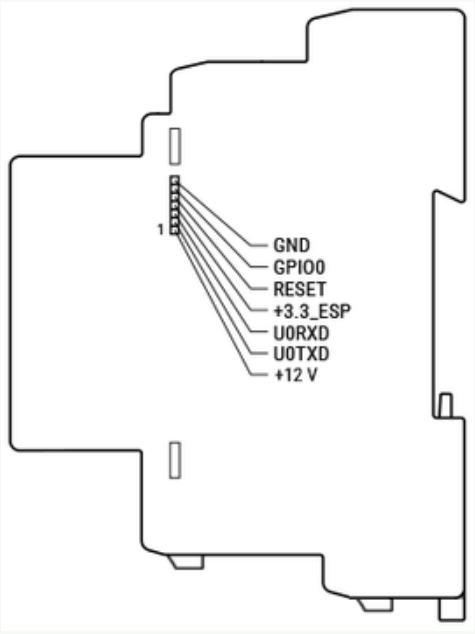
1 RJ45 Connector for LAN connection.
⚠CAUTION: Plug in or unplug the LAN cable only when the device is powered off! Ensure that the LAN cable connector is non-metallic in the parts handled by the user to avoid electrical shock.

Add-on/optional interface

Proprietary serial interface can be combined with Ampisent PowerPro 3PH to deliver switching capabilities. The add-on device can be purchased separately.
⚠CAUTION! High voltage on the add-on interface when the Device is powered!



Simplified internal circuits



Proprietary serial interface for switching

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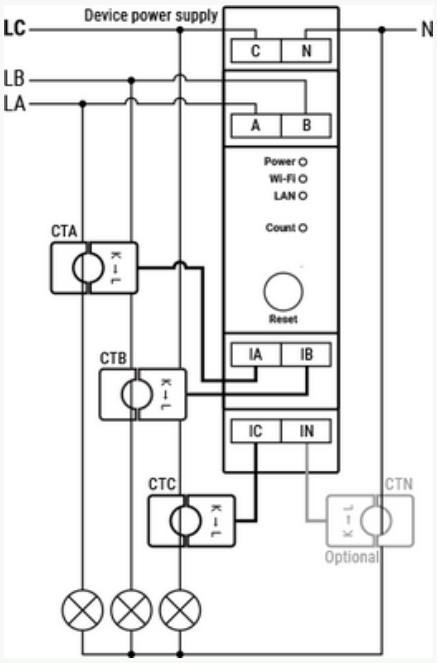
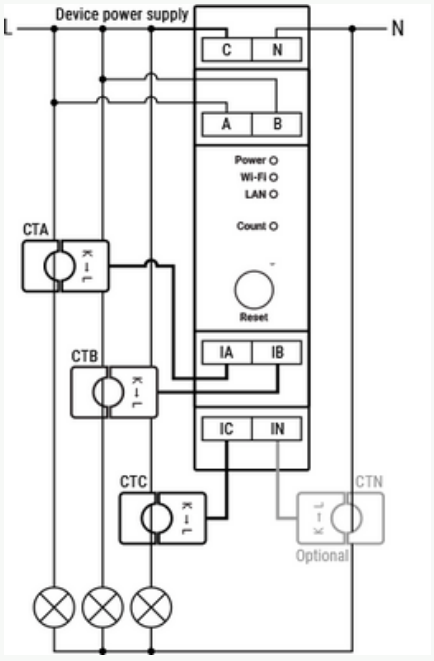
2. Wiring the device

Power Supply Wiring

1. Connect the live (L) and neutral (N) wires from the mains to the corresponding input terminals on the Ampisent PowerPro 3PH.
2. Ensure the connections are secure and tight.
3. CT Sensors Installation
   - Place the CT sensors around the live wires of the circuits to be monitored.
   - Connect each CT sensor to the corresponding inputs IA, IB, IC on the Ampisent PowerPro 3PH.
4. Relay Outputs Wiring:
   - Connect the relay input (I) and output (O) terminals to the devices or systems you want to control based on energy consumption triggers.
   - Optionally, add a contactor to control higher-rated circuits (greater than 2A) as the default switching capacity is only 2A.
5. Optional - Ethernet Cable Connection:
   - Connect the Ethernet cable to the RJ45 port for LAN communication.
   - Ensure the device is powered off when connecting or disconnecting the Ethernet cable.
6. Optional - DIN Rail Mounting:
   - Attach the mounting accessories and snap the device onto the DIN rail.
7. Initial Power-Up and Configuration
   - Once all connections are secure, restore power to the installation site.
   - Verify that the Ampisent PowerPro 3PH powers on and that the LED indicator lights up.



Three-phase wiring



Single phase wiring

3. Network configuration

Use the Ampisent app to configure the device, connecting it to your local Wi-Fi network.

4. Testing

Check the Readings

1. Verify that the Ampisent PowerPro 3PH reports real-time energy consumption for all connected circuits accurately.
2. Use a multimeter to compare readings if necessary.

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GET IT ON Google Play

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Specifications

PHYSICAL	
Mounting	Din rail mount
Shell material:	Plastic
Weight:	62 ±1 g
ENVIRONMENTAL	
Ambient temperature:	-20 °C to 40 °C
Humidity:	30% to 70% RH
Max. altitude:	2000 m / 6562 ft
ELECTRICAL	
Power supply voltage AC:	110 - 240 V, 50/60 Hz
Power supply voltage DC:	N/A
Power consumption:	< 3 W
SENSORS, METERS	
Temperature sensor:	Yes
Voltmeters (RMS for each phase):	100 - 260 V
Voltemeters accuracy:	±1 %
Ammeters accuracy:	±1 % (2 - 120 A), ±2 % (1 - 2 A), ±5 % (0 - 1 A)
Power and energy meters:	Active and apparent power, Active and apparent energy, Power factor, Fundamental active and fundamental reactive energy
MCU	
CPU:	ESP32-D0WDQ6
Flash:	16 MB
FIRMWARE CAPABILITIES	
Webhooks (URL actions):	20 with 5 URLs per hook
Scripting:	mJS
MQTT:	Yes
CoAP:	No