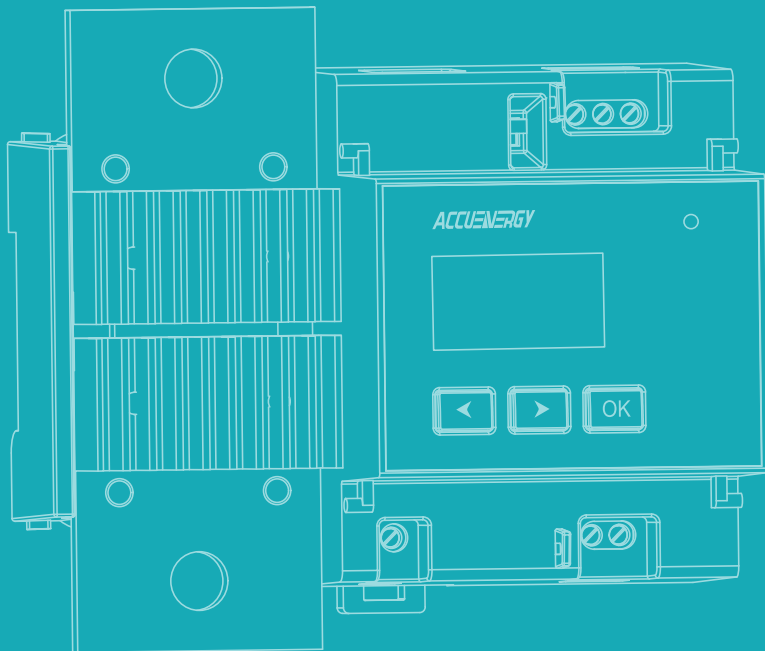


AcuDC 300 Series

EV Charging Meter

QUICK SETUP GUIDE



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US

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METER MODEL

AcuDC-301-1000V-650A-P2


Important Safety Notice

Read this document and the following symbols carefully before the installation, operation and maintenance of the AcuDC 300 series meter.

Accuenergy is not responsible or liable for any damages or injuries caused by improper meter installation and/or operation.

- Prior to maintenance and repair, the equipment must be de-energized and grounded.
- A switch or circuit breaker must be included in close proximity to the equipment and operator.
- All maintenance work must be performed by qualified professionals with formal training and experience in high voltage/current.
- Meter must be installed in an NRTL-certified enclosure to provide suitable protection.

The following symbols can be found either in this document or on the product.

 **ELECTRIC HAZARD:** Indicates information about procedures which must be followed to reduce the risk of electric shock and danger to personal health.

 **WARNING ALERT:** Indicates a hazardous circumstance which may result in severe injury or death.

 **NOTE:** Provides additional information before an action shall be taken by the user.

Legal Notice

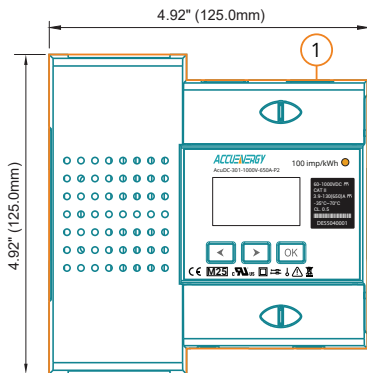
This AcuDC 300 quick setup guide provides informational and operational guidance regarding the use of the meter. While effort has been made to ensure the accuracy, reliability, and completeness of the information at the time of publication, Accuenergy assumes no responsibility for any errors, omissions, or misunderstandings in this document and reserves the right to modify its content at any time without prior notice.

Users should verify with Accuenergy or their authorized local representative that the document in use is the latest version and strictly adhere to the installation, operation, and maintenance procedures specified herein. Accuenergy shall not be held liable for any damages or consequences resulting from improper use or failure to comply with the provisions of this document. This quick setup guide may not be altered or reproduced in whole or in part by any means without the expressed written consent of Accuenergy.

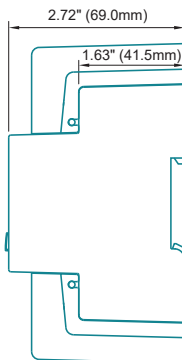
1. Appearance and Dimensions

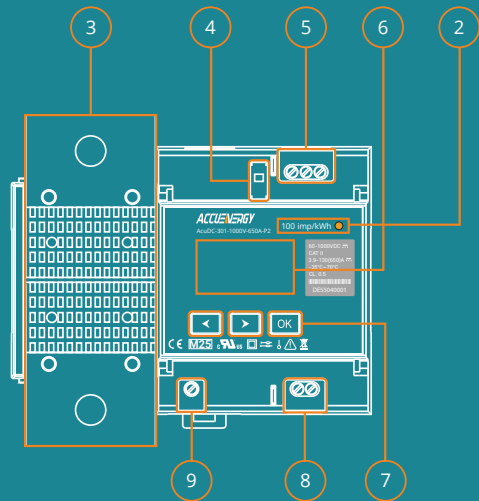
PART NAME	DESCRIPTION
1. Front Casing	Transparent front meter casing with accessible display and controls
2. Pulse LED Indicator	LED light to indicate energy pulse signal
3. Current Input Terminal	Built-in shunt used in direct connection
4. Seal Switch	Enable and disable the seal status
5. RS485 Terminal	Modbus RS485 communication port
6. LCD screen	Backlight screen
7. Navigation Key	Three keys to navigate through the screen and configure settings
8. Power Supply Terminal	Control power input
9. Voltage Input Terminal	Used for voltage input
10. DIN Rail	Used on a 35mm DIN rail mount
11. Ethernet Port	Single RJ45 Ethernet Connector

FRONT VIEW

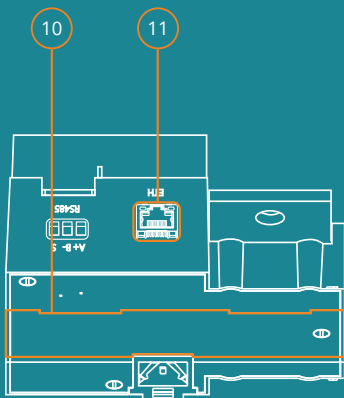


SIDE VIEW





FRONT VIEW



TOP VIEW

2. Operating Environment



ELECTRIC HAZARD

Ensure the following specifications are met. Failure to do so may affect accuracy, impair system function, damage hardware, or pose safety risks.

- Ensure the AcuDC 300 is installed in a dry and dust-free environment.
- Avoid placing the meter near heat, radiation and strong electrical interference sources.
- Operate the meter's temperature between -40°C to 70°C (-40°F to 158°F).
- Do not exceed the maximum rated input voltage of the meter or to any other connected devices.
- Do not perform high-voltage insulation resistance testing to any terminal.

3. Installation Method

Use a dry, clean cloth to remove dust from the surface of the AcuDC 300.

The installation must be performed by qualified, competent and accredited professionals who has received formal training and has experience with high voltage and current devices. Appropriate personal protective equipment (PPE), such as gloves, safety glasses, and arc flash protective clothing is mandatory to ensure safe installation. Any unsuitable installation environment may affect measurement accuracy and system performance, cause hardware damage, or result in safety hazards.

Caution must be exercised before working on voltage and current channels.

- Do not apply input voltage above the rated maximum limit of the meter. Before energizing the meter, please refer to the meters label and specifications.
- Do not perform high voltage tests on the output, input, or communication terminals.
- Use dry cloth to clean the meter if necessary.

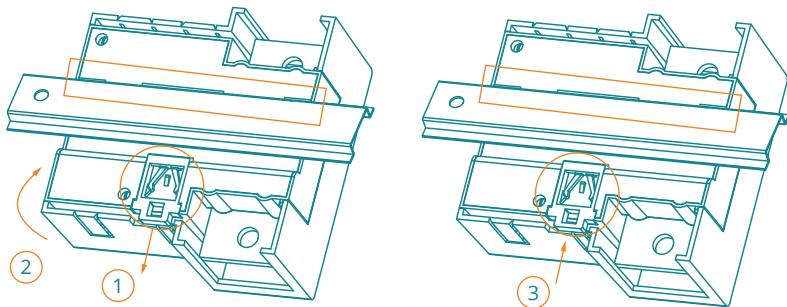
Before installation, ensure that the application meets the requirements specified in the product specifications, including:

- Power Supply
- Voltage and current signal ranges
- Overvoltage category
- Pollution degree
- Altitude

4. DIN Rail Mount for Cable Installation

If cables are used for current input, a DIN rail is required as mounting support. The AcuDC 300 can be installed on a standard 35mm DIN rail.

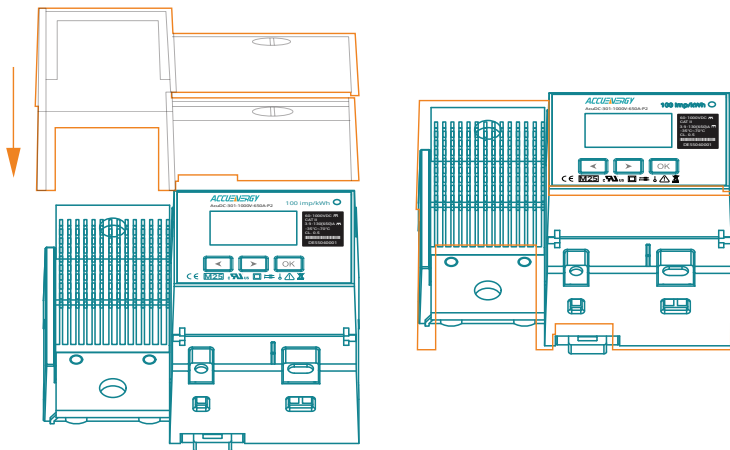
1. From the back of the AcuDC 300, simultaneously pull down the two clip locks as shown below in ①.
2. Position the AcuDC 300 so its back is facing the DIN rail. Place the AcuDC 300 two upper mounting brackets over the top of the DIN rail groove. Fit the AcuDC 300 onto the DIN rail as illustrated in ②.
3. Release the clip lock back up ③ to secure the AcuDC 300 onto the DIN rail, as illustrated.



5. Front Case Removal and Attachment

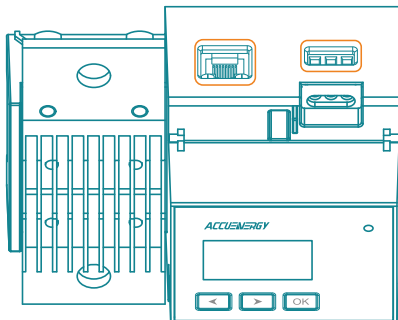
Operators can access the power supply, voltage and current input terminal blocks by removing the front casing.

1. Hold the meter in both hands, then gently lift the front casing from the right side until the clips detach.
2. Remove the front casing from the meter and place it in a safe area.
3. After the electrical wiring installation is complete, operators must reattach the front case.
4. Position the front case over the meter and ensure the attachment clips are aligned correctly.
5. Gently push the front case down onto the meter clips.

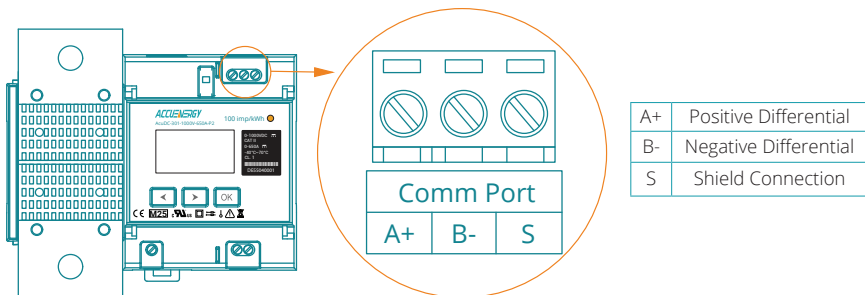


6. RS485 and Ethernet Ports

AcuDC 300 supports Modbus RTU protocol over RS485 communication and a single RJ45 connector to support the Modbus TCP protocol.



For Modbus-RTU via RS485 connection, the cable distance should not exceed 1200m. Use a shorter cable when connecting multiple devices to the same network or for a higher baud rate. Use an RS232-to-RS485 converter if the master device has an RS232 port.



To improve RS485 communication quality:

- Use a shielded 22AWG cable.
- Minimize electrical noise with single-point earthing.
- Avoid T-type connection topology.
- Keep communication cables separated from electrical noise sources.
- Use a 120-300Ω, 0.25W terminating resistor at the end of the daisy-chain.

For Modbus-TCP/IP communication, an 10/100 Mbit/s CAT5 Ethernet cable (recommended) can be configured using IP configuration or DHCP. The connector meets the mechanical and electrical requirements for IEC603-7. Two status LEDs provide network status information: LED_L (Yellow) indicates transmission speed, lighting when operating at 100Mbps and remaining off at 10 Mbps; LED_R (Green) indicates link and activity status, remaining on when a connection is established and blinking during data transmission.

7. AcuDC 300 Series Wiring



Appropriate safety wear is mandatory to ensure safe installation.

Caution must be taken before working on voltage and current channels, including cables and terminal blocks.

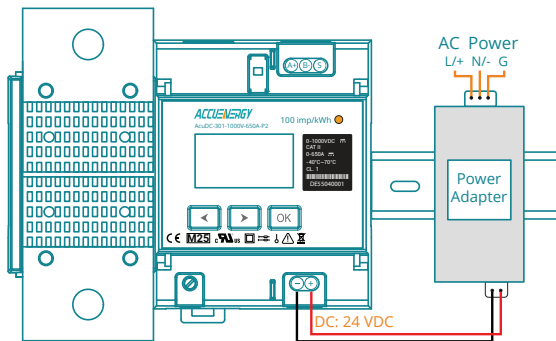
Before energizing the meter, please refer to the meter's label and specifications. Do not perform high voltage tests or insulation experiments to output, input, or communication terminals

7.1 Power Supply Terminal Wiring

To connect the auxiliary power adapter to the DC power port, ensure that a 24VDC Class 1 power adapter (sold separately) is used for the meter. The maximum current consumption is 0.3A at 9VDC.

Accuenergy recommends using the AcuLink-RIK-PSU.

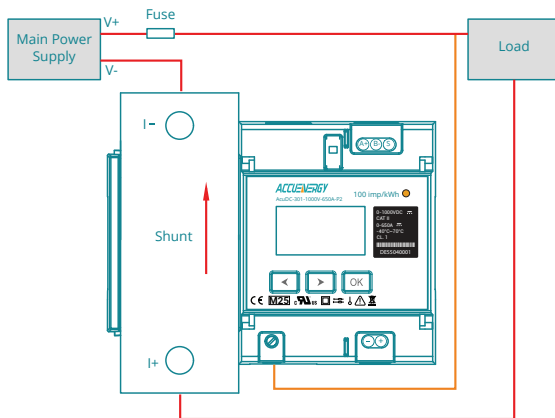
1. Use a 3 x 0.5 mm (DIN 5264) screwdriver to loosen the two power supply terminal screws from the meter.
2. Insert the positive and negative copper wire (22AWG~18AWG) into their respective terminal. Fasten the screw to secure the wire.



7.2 Voltage and Current Input Terminal Wiring

The AcuDC 300 features a built-in shunt for direct current measurement up to 650 A and supports voltage input up to 1000 VDC (OVC II). A fuse (typically 1 A / 1500 VDC) should be installed in the voltage input loop for protection.

The current input range is 0A to 650A, with overcurrent withstand capacity of 19,500A for 0.01 second.



Follow the steps below to ensure a secure and compliant connection to the terminal.

1. Use a 3 x 0.5 mm (DIN 5264) screwdriver to loosen the single voltage terminal screw from the meter.
2. Insert the copper wire (16AWG~14AWG) into the voltage input terminal. Fasten the screw to secure the wire.

The shunt can be connected using cables or directly mounted on to a busbar as described below.

7.2.1 Busbar Connection Option

The AcuDC 300 can be installed on a busbar, acting as both current input and mounting support.

1. Prepare the busbar by drilling two screw openings that are 90mm apart and are properly sized to accommodate M10 screws.
2. Place the meter over the busbar, adjust its position so the prepared screw holes align with the current input terminals. Refer to the diagram.
3. Secure the installation with the M10 screws, nuts and gaskets.

7.2.2 Cable Connection Option

For electric cable installation,

1. Choose the correct ring lugs according to the wire gauge. The stud size should accommodate M10 screws.
2. Strip the cable insulation from the end of the cable.
3. Insert the striped cable into the barrel of the ring lug.
4. Squeeze the ring lug firmly to secure the connection.
5. Place the ring over the corresponding current terminal connection points highlighted in blue, and ensure the cables are wired correctly.
6. Secure the installation with screws, nuts and gaskets.

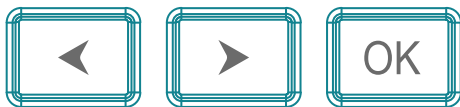
After the electrical wiring installation is complete, refer to **Front Case Attachment** to reinstall the front cover.

8. Navigation Keys

AcuDC 300 is designed with three navigation keys for easy access to the Settings screen.

Users can press the Left and Right keys simultaneously to return to the Home screen.

To enter a value, start by pressing the Left key to increment the first digit until the correct number is displayed. Press the Right key to navigate to the next adjacent digit. Continue until the numbers of all four digits have been selected. Push the OK key to confirm the input.



8.1 Meter settings

To access Settings, from the Home screen use the Left/Right key, navigate to the Settings option and then press OK.

The user will then be prompted to enter a four-digit password to access the Settings screen. Refer to the Navigation Keys section for instructions on how to enter the password.

The system default password is 0000. This password can be changed on Acuvue 2

After entering, the following parameters can be configured.

RS485 COMMUNICATION		
PARAMETER	OPTIONS	DEFAULT VALUE
P1 Baud Rate	2,400, 4,800, 9,600, 19,200, 38,400, 57,600, 76,800, or 115,200.	19,200
P2 RS485 Parity	None1, None2, Odd, or Even.	None1
P3 Modbus Slave ID	001 to 247	001

P4 Modbus RTU Enable	Enable and Disable	Enable
P5 Modbus TCP Enable	Enable and Disable	Enable
P6 Modbus TCP Port	00001 to 65534	00502

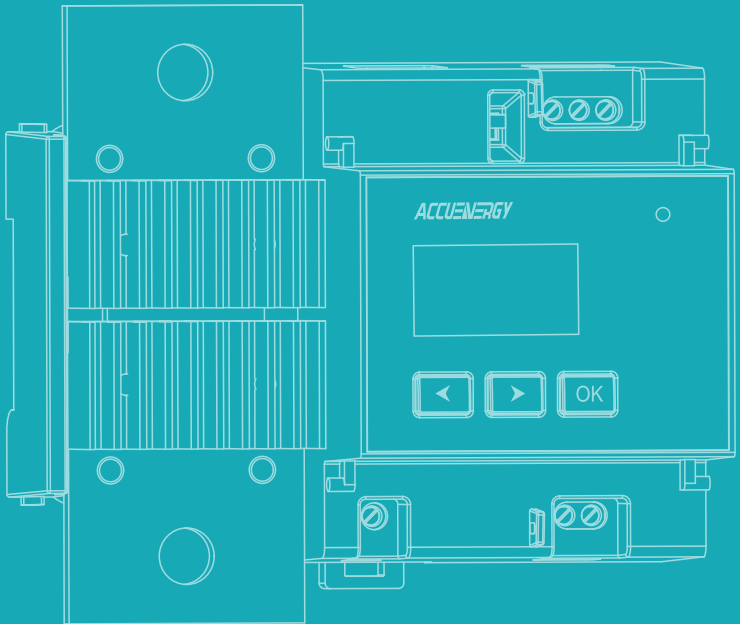
ETHERNET		
NETWORK	DEFAULT	
P7 DHCP	Manual	
P8 IP Address	192.168.1.254	
P9 Subnet Mask	255.255.255.000	
P10 Gateway	192.168.001.001	
P11 Preferred DNS Server (DNS1)	008.008.008.008	
P12 Alternate DNS Server (DNS2)	008.008.004.004	

METER SETTINGS		
NETWORK	OPTIONS	DEFAULT
P13 Reset Network	Yes and No	No
P14 Backlit Off Delay	000-120 minutes	010 minutes

To accommodate various scenarios of operation, AcuDC 300 is designed with three system modes, with different permissions ranking from highest to lowest as Production Mode, Assembly Mode and Normal Mode. In Production Mode, when the seal is open, all modifications are allowed. The system enters Assembly Mode with a command when the seal is closed, which allows modification of Cable Loss configuration and automatically exiting after a 10 second timeout upon receiving a command. Energy values cannot be altered in this mode. Normal mode is used to configure the system communication, display, time, and related settings. The energy pulse is output to the device panel LED, and different energy parameters and pulse constants can be configured.

9. Technical Specification

INPUTS	
VOLTAGE INPUT	
Metering Range	0-1000V
Withstand	5kVRMS 1min
Pickup Voltage	10V
Accuracy	0.1% (60-1000V)
CURRENT INPUT	
Nominal Current	130A
Metering Range	0-650A
Withstand	30 x I _{max} for 0.01 second
Pickup Current	0.52A
Accuracy	0.2% (0.52A-650A)
ENERGY ACCURACY	
Energy	EN50470-4 Class C
Charge	0.5%
DC CONTROL POWER	
Operating Range	24VDC
Burden	<3W
Withstand	5kVRMS 1min
OPERATING RANGE	
Operating Temperature	-40°C to 70°C
Certification Limits	MID: -40°C to 70°C



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Specs Subject To Change Without Notice.