

Specifications

| Electrical Characteristics             |                                                                  |
|----------------------------------------|------------------------------------------------------------------|
| Voltage DC input                       | Min. 100V DC, Max. 1000V DC                                      |
| Auxiliary supply                       | Min. 9V DC, Max. 40V DC                                          |
| DC shunt input                         | 75mV (default)                                                   |
| Current range                          | COUNTIS EVDC 300: 2.5-50(300)A<br>COUNTIS EVDC 600: 2.5-50(600)A |
| Voltage loop power consumption         | ≤0.5W                                                            |
| Current loop power consumption         | COUNTIS EVDC 300: ≤36W<br>COUNTIS EVDC 600: ≤72W                 |
| Auxiliary loop power consumption       | ≤2W                                                              |
| DC voltage withstand                   | 6.2kV DC                                                         |
| Impulse voltage withstand              | 9.6kV - 1.2 / 50μS waveform                                      |
| Pulse output                           | 0,1 kWh/imp                                                      |
| Pulse duration                         | 60, 100(default), 200mS                                          |
| Pulse output indicate                  | Total kWh/ import kWh / export kWh                               |
| Display                                | LCD with backlit                                                 |
| Max. reading                           | 999999.9999kWh                                                   |
| Accuracy                               | IEC62053-41 Class 1.0 / EN50470-4 Class B                        |
| Environmental Characteristics          |                                                                  |
| Operating temperature                  | -40°C to +70°C                                                   |
| Storage and transportation temperature | -40°C to + 80°C                                                  |
| Reference temperature                  | 23°C± 2°C                                                        |
| Relative humidity                      | 0 to 95%, non-condensing                                         |
| Altitude                               | up to 2000m                                                      |
| Measuring category                     | CAT II                                                           |
| Mechanical environment                 | M1                                                               |
| Electromagnetic environment            | E2                                                               |
| Degree of pollution                    | 2                                                                |
| Protective class                       | II                                                               |
| Warm up time                           | 3S                                                               |
| Mechanical Characteristics             |                                                                  |
| Din rail dimensions                    | 36x100x63 (WxHxD) DIN 43880                                      |
| Mounting                               | DIN rail 35mm                                                    |
| Ingress Protection                     | IP20 (Installed in an electrical cabinet with IP51 rating)       |
| Material                               | Self-extinguishing UL94V-0                                       |
| Installation environment               | Dry environ ment                                                 |
| Communication                          |                                                                  |
| Communication type                     | Rs485                                                            |
| Protocol                               | Modbus RTU                                                       |
| Baud rate                              | 1200, 2400, 4800, 9600(default), 19200 bps                       |
| Parity                                 | EVEN/ ODD / NONE                                                 |
| Stop bits                              | 1 or 2                                                           |

Technical Standards

[1] EN IEC 61326-1:2021 Electromagnetic Compatibility Directive - Electrical equipment for measurement, control and laboratory use - EMC requirements - Part 1: General requirements.

[2] EN IEC 61326-2-3:2021 Electromagnetic Compatibility Directive.

[3] EN 61010-1:2010+AI:2019 Low Voltage Directive 2014/35/EU - Safety requirements for electrical equipment for measurement, control, and laboratory use - Part 1: General requirements.

[4] EN 61010-2-030:2010 Low Voltage Directive 2014/35/EU - Particular requirements for testing and measuring circuits.

[5] IEC 62052-11:2020 “Electricity metering equipment (d.c.) - General requirements, tests and test conditions - Part 11: Metering equipment”.

[6] EN IEC 62052-11/AI:2022 “Electricity metering equipment (d.c.) - Part 11: general requirements, tests and test conditions - Metering equipment” .

[7] EN 50470- 4:2023 “Electricity metering equipment (d.c.) - Part 4: Particular requirements - Static meters for DC active energy (class indexes A, B and C)”.

[8] IEC 62053-41:2021 “Electricity metering equipment (d.c.) - Particular requirements - Part 41: Static meters for DC energy (classes 0,5 and 1)”.

QUICK START GUIDE

EN



DC Energy Meter for EV Chargers

COUNTIS EVDC

1000V DC

300A/600A



Safety

Warning

The General warning symbol calls attention to possible risks of injury. Observe all the instructions listed un der the symbol to prevent injuries or even death.

Caution

Hazard of electric shock and failure to take the necessary safety precautions will result in death, serious injury or considerable material damage.

- The unit does not have internai fuses therefore external fuses must be used for protection and safety under fault conditions.
- Use only insulating tools.
- Do not connect while circuit is live (hot).
- Place the meter only in dry surroundings.
- Do not mou nt the meter in an explosive area or expose the meter in the dust, mildew and insects.
- Make sure the used wires or bus-bar are suitable for the maximum current of this meter.
- Make sure wiring correctly before activating the current/voltage to the meter.
- Do not touch the meter connecting the terminal directly with your bare hands, with metal, blank wire or other material as you may get an electrical shock.
- Make sure the protection caver is placed alter installation.
- Installation, maintenance and reparation should only be done by qualified personnel.
- Never break the seals and open the front caver as this might influence the functionality of the meter, and will avoid any warranty.
- Do not drop, or allow physical impact to the meter as there are high precision components inside that may break.
- An external switch or circuit-breaker should be installed on the power supply wires, which will be used to disconnect the meter and the de-vice supplying energy. Il is recommended that this switch or circuit-breaker is placed near the meter because that is more convenient for the operator. The switch or circuit breaker must comply with the specifications of the building’s electrical design and all local regulations.
- Although the auxiliary power supply is a low-voltage terminal, il still disconnects the power supply and then wire it.
- To connect the external shunt, it is necessary to disconnect the power supply and wear insulated gloves.

Product introduction

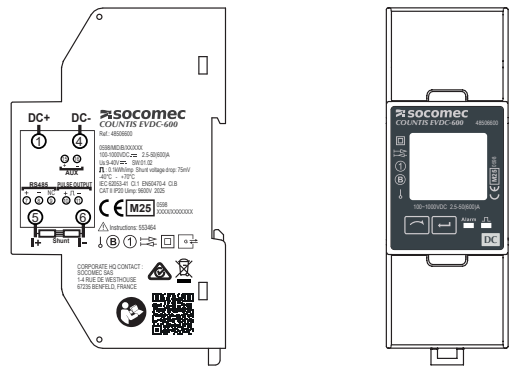
The COUNTIS EVDC series energy meters are tailored for use in DC installations, enabling comprehensive monitoring and measurement. Designed for DIN rail mounting, they accurately track essential DC parameters including voltage, current, power, and energy. These meters feature bi-directional measurement capability and are equipped with a pulse output. Data can be easily retrieved via RS485 communication using the Modbus RTU protocol. Powered by a DC supply, the meters support input voltages up to 1000V DC and offer flexible current measurement through external DC shunts.

Type code

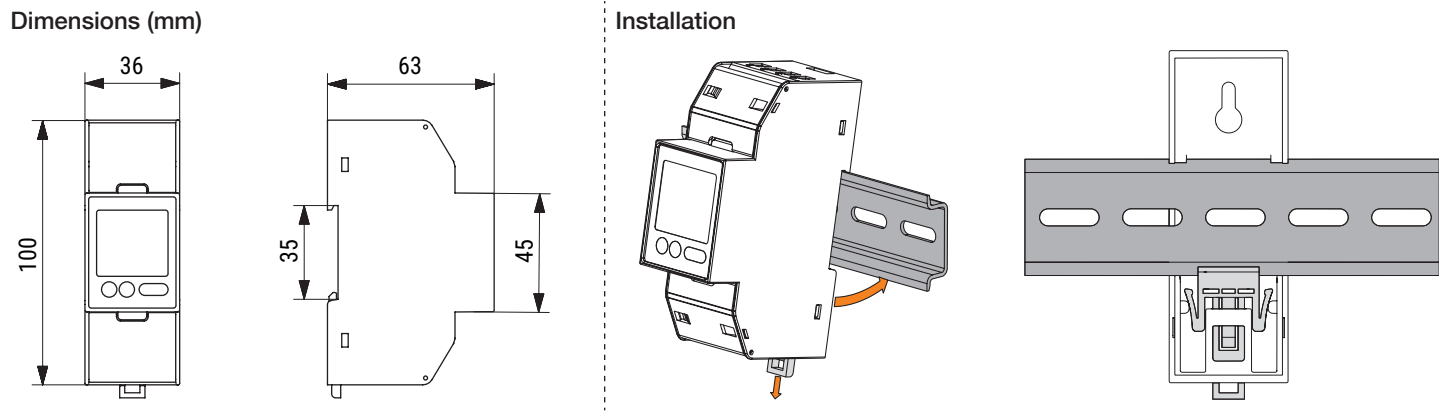
| Model            | Shunt     | Voltage Range | Current Range | Pulse Constant( Default) |
|------------------|-----------|---------------|---------------|--------------------------|
| COUNTIS EVDC 300 | 300A/75mV | 100V-1000V    | 2.5-50(300)A  | 0,1 kWh/imp              |
| COUNTIS EVDC 600 | 600A/75mV |               | 2.5-50(600)A  | 0,1 kWh/imp              |



Marking

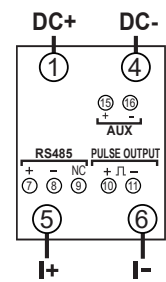


Installation

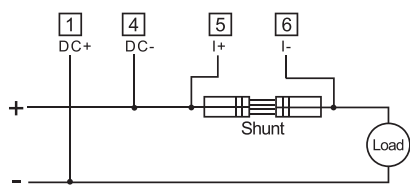


Wiring

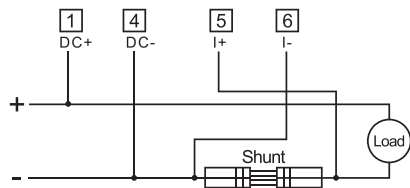
Terminal Connection



Shunt Connection



Shunt Connection: Positive Type

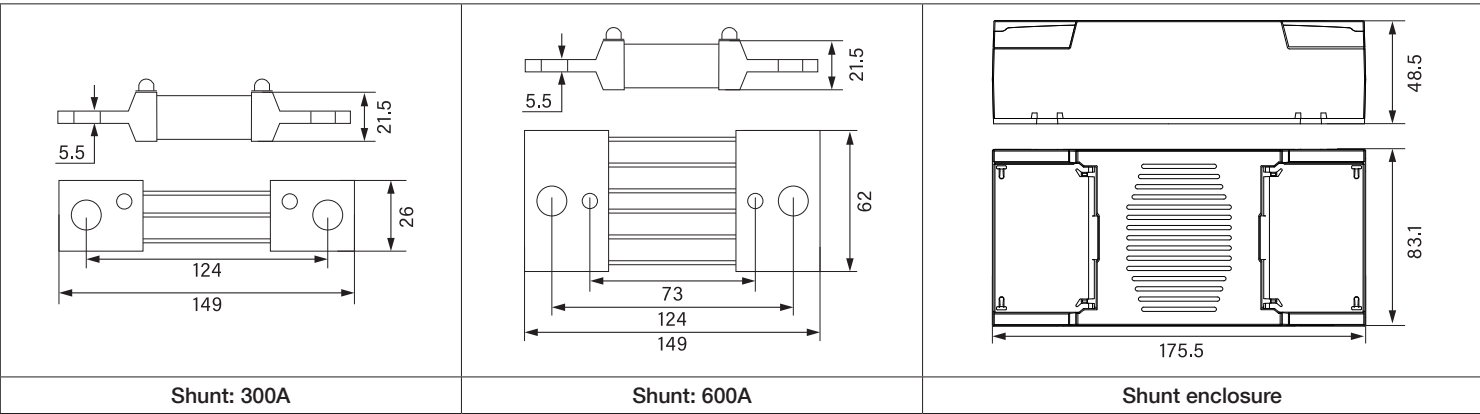


Shunt Connection: Negative Type

Shunt



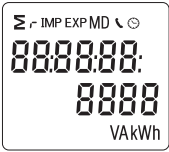
| Primary Input | Rated Voltage Output | Accuracy | Dimension(mm) | Dimension(shell)(mm) |
|---------------|----------------------|----------|---------------|----------------------|
| 300A          | 75mV                 | 0.2%     | 26x149x21.5   | 83.1X175.5X48.5      |
| 600A          | 75mV                 | 0.2%     | 62x149x21.5   | 83.1X175.5X48.5      |



Operation

Display

When it is powered on, the meter will initialize and do self-checking



Buttons function

There are two buttons on the front panel:

|  |                                                                                                         |
|--|---------------------------------------------------------------------------------------------------------|
|  | > Scroll the display for data checking.<br>> Changing option at Set-up mode.<br>> Exit the Set-up mode. |
|  | > Set-up mode entry.<br>> Confirmation                                                                  |

Scroll Display

Alter the initialization and self-checking programs, the meter displays the measured values. The default page is total kWh. If the user wants to check other information, please press the scroll button on the front panel.

**Total kWh → re-settable energy → Voltage → Current → Power → Pulse constant → Primary Current → Meter address → Baud rate → Parity → Software version**

Set-up Mode

To gel into Set-up Mode, the user needs to press the «Enter» button for 3 seconds. Password, communication parameter, pulse parameter.

| Page | Display | Descriptions                                                 |
|------|---------|--------------------------------------------------------------|
| 1    |         | Password<br>Default password:1000                            |
| 2    |         | Modbus address Options: 1-247                                |
| 3    |         | Baud rate<br>Options: 1.2k, 2.4k, 4.8k, 9.6k(default), 19.2k |
| 4    |         | Parity<br>Options: EVEN, ODD, NONE(default)                  |
| 5    |         | Type of pulse output<br>Options: total kWh, IMP kWh, EXP kWh |
| 6    |         | Pulse width<br>Options: 60, 100, 200<br>Unit: ms             |

| Page | Display | Descriptions                                                                                                                                                                                                                       |
|------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 7    |         | DIT(Demand Integration Time).<br>Options: 0, 5, 8,10,15, 20, 30, 60(default).                                                                                                                                                      |
| 8    |         | Scroll display time option: 0-60s.<br>Default: 0s, represent do not scroll display.                                                                                                                                                |
| 9    |         | Use  to select the backlit lime option.<br>Keep pressing  for 3 seconds, the current selection will flash, use  and  to enter the options: 0, 5, 10, 20, 30, 60 minutes.<br>0 means the light is always on.<br>Default: 60minutes. |
| 10   |         | The range is from 0001 to 9999.<br>Default: 1000.                                                                                                                                                                                  |
| 11   |         | Shunt wiring Option: N, P<br>N: Negative type(default)<br>P: Positive type                                                                                                                                                         |

Error code

|   |  |              |
|---|--|--------------|
| 1 |  | Memory error |
|---|--|--------------|