SMA ENERGY METER-US
(EMETER-US-50 – ES103 LR CCT1U)
Installation Manual

LEGAL INFORMATION

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1 Important information

1.1 Scope of validity

This document applies to the EMETER-US-50/ES103 LR CCT1U with the communication interfaces LAN and RS-485.

The product is hereinafter referred to as ES103.

1.2 Authorized persons

The tasks described in this document must only be performed by qualified persons. Qualified persons must have the following skills and qualifications:

- The applicable product training is a prerequisite for installing the ES103.
- Training on how to handle the hazards and risks that arise during the installation, repair and use of electrical devices and systems.
- Training in the installation and commissioning of electrical devices and systems.
- Knowledge of the pertinent laws, standards and guidelines.
- Knowledge of and compliance with this document and all safety information.

1.3 Symbols on the product

Symbol	Description
	Attention – Consult the manual. This symbol indicates that hazards may arise during the installation and operation of the meter if the installation instructions are not followed correctly.
	Installation, electrotechnical knowledge – Used to identify electrotechnical devices and products that require special electrotechnical knowledge for their installation.
	Devices of class II – Used to identify devices that fulfill the safety requirements for devices of class II as per IEC 61140. Device protected throughout by double insulation or reinforced insulation.

1.4 Hazard classification

The following levels of warning messages may occur when handling the product.

⚠ DANGER

Indicates a hazardous situation which, if not avoided, will result in death or serious injury.

⚠ WARNING

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

⚠ CAUTION

Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

NOTICE

Indicates a situation which, if not avoided, can result in property damage.

1.5 Disposal

The product must not be disposed of in a residual waste bin. It must be taken to a proper waste disposal facility.

2 Safety

2.1 Intended purpose

The ES103 is a UL 2808 meter assembly that can be installed in the field. It measures electrical values and makes them available via LAN or RS-485.

This product is NOT a main utility meter for billing purposes. The energy data collected by the ES103 may vary from the data of the main utility meter. Use the ES103 only in the United States and Canada.

THIS PRODUCT IS NOT DESIGNED, MANUFACTURED OR INTENDED FOR USE OR RESALE FOR OPERATION IN NUCLEAR FACILITIES, AIRCRAFT OR OTHER TRANSPORTATION NAVIGATION OR COMMUNICATION SYSTEMS, AIR TRAFFIC CONTROL SYSTEMS, LIFE SUPPORT MACHINES, WEAPONS SYSTEMS, OR ANY OTHER EQUIPMENT OR APPLICATION REQUIRING FAIL-SAFE PERFORMANCE OR IN WHICH THE FAILURE OF PRODUCTS COULD LEAD DIRECTLY TO DEATH, PERSONAL INJURY, OR SEVERE PHYSICAL OR ENVIRONMENTAL DAMAGE. (COLLECTIVELY, "HIGH-RISK APPLICATIONS"). ANY EXPRESS OR IMPLIED WARRANTY OF FITNESS FOR SUCH HIGH-RISK APPLICATIONS IS EXPRESSLY DISCLAIMED.

⚠ DANGER

Risk to life due to electric shock or fire

In the event of misuse or damage to the product, electrical voltages may be present on the housing or the communication interfaces (LAN/RS-485).

- Do not use the ES103 and supplied materials if it is damaged, and only use it as described in this documentation.

⚠ WARNING

Risk to life due to electric shock

- Since it is rated as overvoltage category III, the ES103 must only be installed in the main service panel downstream of the main electricity meter.
- For reasons of safety, the product (including the software) must NOT be modified, and components that have not been explicitly recommended or sold for this product by SMA Solar Technology America LLC must NOT be installed.
- Any other use and the use of damaged devices can result in injuries or property damage.
- Unauthorized modifications, conversions and repairs, as well as opening the product, are forbidden.
- The included documentation is part of the product. It must be read and followed, and stored in a location that is accessible at all times.

NOTICE

Risk of damage due to improper use

- Equipment that processes the measurement data of the ES103 must ensure that not receiving measurement values from the ES103 or receiving incorrect measurement values from the ES103 does not result in a hazard.
- The ES103 is suitable for residential purposes (one or two-family house).
- The ES103 is part of a power control system. To ensure the proper function of the system, the ES103 must not be removed. Attach the included label to the main service panel in a visible area and note the designation of the breaker to which the ES103 is connected.

2.2 IMPORTANT SAFETY INSTRUCTIONS

SAVE THESE INSTRUCTIONS

This section contains safety instructions that must always be observed during any work.

The product was developed and tested according to international safety requirements. Despite careful design, residual risk remains as with all electric and electronic devices. To prevent personal injury and property damage and to ensure the continuous operation of the product, read this section carefully and always follow all safety instructions.

⚠ WARNING

Risk to life due to electric shock

In the event of a fault, dangerous voltages may be present on the product during work on the supply circuit. This can result in death or severe injuries. Deadly voltages are present on live parts.

General

- Only use the ES103 in a dry environment, and keep it away from liquids.
- Only install the ES103 in approved housings or service panels downstream of the meter of the power supply company. In this way, the connections for the hot and neutral conductors are behind a cover or guard, thus preventing unintentional contact.
- Use of an enclosure providing an internal Pollution Degree 2 (PD2) environment is required.
- In order to prevent access by unauthorized persons, a tool must be required to open the front cover of the service panel.

Installation

- Before beginning installation or maintenance work, switch off the main breaker on the main service panel and secure it against unauthorized activation.
  Attention! The wires entering the main breaker still carry dangerous voltages.
- Maintain the specified minimum clearance between the communication cable (LAN, RS-485) and the components of the mains voltage installation, or use suitable insulation.
- The installation must be performed in compliance with local laws, provisions, regulations and standards (e.g., National Electrical Code®, NFPA 70, or Canadian Electrical Code®, CSA-C22.1).
- Make sure that the cables or wires for the electrical connection are not damaged.

Communication cable

- If the ES103 communication cable is not connected directly to the SMA inverter, then the mains voltage cable and the communication cable must not use the same cable gland or cable conduit.
- If communication cables leave the building, lightning strikes can result in high overvoltages. Use a suitable overvoltage protection device to protect this conductor.

NOTICE

Damage to or destruction of the ES103 due to improper use

- Never operate the ES103 outside the specified technical limits.

NOTICE

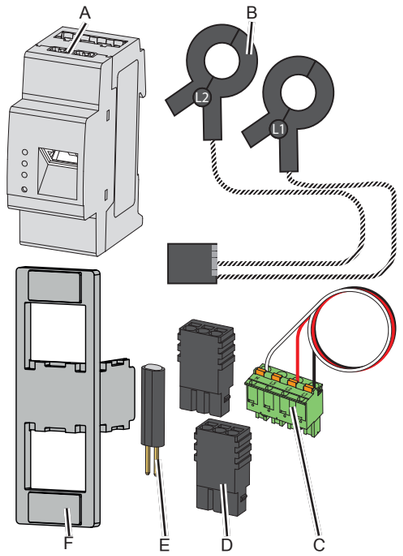
Damage to the product due to condensation water

Condensation water can form in the device if it is brought from a cold environment into a warm environment. This can damage the product or impair its function.

- If there are large temperature differences, wait until the device has reached room temperature before connecting the power supply.
- Make sure that the product is dry.

3 Scope of delivery

Contact your dealer if the scope of delivery is incomplete or if there is any damage.



Item	Quantity	Designation
A	1	ES103 energy meter
B	1	Current transformers (2 CTs with preconfigured connector)
C	1	Power cable with preconfigured connector
D	2	RS-485 connectors
E	1	120-Ω termination resistor for RS-485
F	1	Mounting adapter

Not Included - Must be supplied by Installer - Proper network LAN or RS-485 cable.

4 Installation

4.1 Precautionary measures

⚠ DANGER

Risk to life due to fire or explosion

Despite careful design, electrical devices can catch fire. This can result in death or severe injuries.

— Do not install the device in locations with highly flammable substances or combustible gases.

— Do not install the device in locations with arisk of explosion. Make sure that the maximum voltage is within the device specification.

⚠ WARNING

Risk to life due to electric shock

This installation/maintenance manual is intended solely for use by authorized persons (see section 1.2).

To prevent electric shock, only the maintenance work described in the installation/maintenance manual must be performed.

Always observe the following checklist:

— Only authorized persons or licensed electricians may install the ES103. The mains voltage of 110 VAC to 250 VAC can be deadly!

— The installation must be performed in compliance with local laws, provisions, regulations and standards (e.g., National Electrical Code®, NFPA 70, or Canadian Electrical Code®, CSA-C22.1).

— Do not install submetering equipment in any area where breaker arc venting exhaust gases could be redirected as a result of submetering equipment installation.

— Only use parts that have been approved by the supplier.

— Disconnect the device from live voltage sources before accessing it.

— Incorrect installation of the meter can impair the safety protection measures.

4.2 Installation

⚠ DANGER

Risk to life due to magnetic field

Heart rhythm problems with shock/loss of consciousness

— Persons with an ICD device or a pacemaker should avoid close or prolonged contact with the magnets on the mounting adapter.

⚠ DANGER

Risk to life due to electric arc

— Keep the magnets of the mounting adapter away from live parts to prevent a short circuit.

⚠ WARNING

Risk to life due to fire

— Do not install the device in the wiring space of housings for switches or overcurrent protection devices if the area of all current sensors, conductors, connection points, branches and devices at each cross-section of the wiring space exceeds 75% of the cross-sectional area of this wiring space.

— The device must not be installed within 2 in (50.8 mm) of live parts with primary conductors, primary terminals or primary connections. This requirement excludes insulated cables.

— If it is installed in a separate external housing, the requirements of the NFPA 70 or CSA-C22.1 must be met.

⚠ CAUTION

Risk of injury due to strong magnetic forces

Slight bruises on fingers

— The magnet on the mounting adapter has a strong attractive force! If you handle it without care, your fingers or skin may be pinched.

⚠ CAUTION

Risk of injury due to sharp edges

Risk of cutting injuries on the hands.

— Wear personal protective equipment.

NOTICE

Risk of damage due to magnetic fields

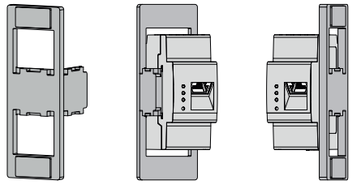
Magnets generate extensive, strong magnetic fields.

— Keep the magnets away from all devices and objects that could be damaged by strong magnetic fields.

— Do not deposit any ferrous tools or knives near the magnets.

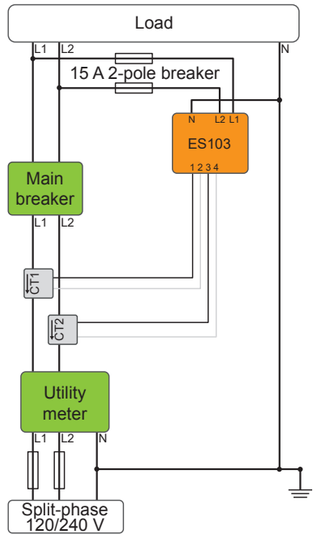
Procedure:

1. Use the included mounting adapter and snap on the ES103 in the back side or side orientation.
2. Remove the protective film on both magnets.
3. Mount the ES103 in an appropriate location inside the cabinet/panelboard (i.e. main service panel).



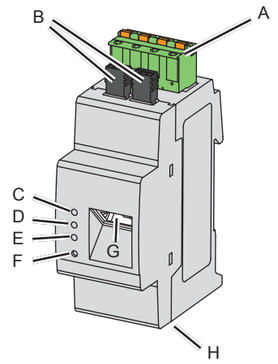
Mounting adapter *Back side mounting* *Side (left or right) mounting*

4.3 Connection

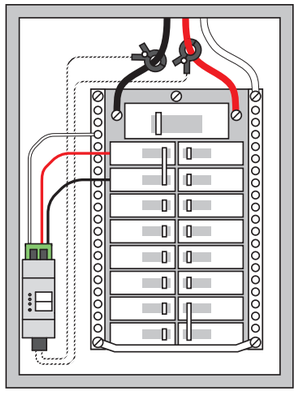


Connection 1-line diagram

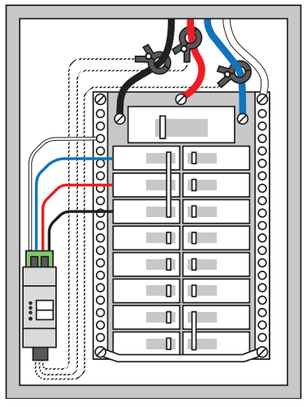
4.3.1 Connection overview



A	Line voltages
B	2x RS-485 connections
C	Status LED
D	Network LED for LAN/Ethernet connection
E	Serial bus LED for RS-485 bus
F	Function button
G	LAN/Ethernet connection
H	CT connection terminal



Split-phase main service panel



3-phase main service panel

4.3.2 Connecting the CT cable

⚠ WARNING

Risk to life due to electric shock

— To reduce the risk of electric shock, always open the electric circuit or disconnect it from the current distribution system or the building supply before installing or maintaining CTs.

— Make sure you have sufficient lighting and stability.

— Only use CTs that have been approved by the supplier.

— Use a cable tie to fasten each CT to the conductor or to the rear wall and route the connection wires in such a way that they cannot come into direct contact with live connections or bus bars.

— Not suitable for Class 2 wiring methods.

— Not intended for connection to Class 2 equipment.

⚠ WARNING

Risk to life due to electric shock or fire

— Do not install the CTs in a location where:

  — 75% of the wiring space of any cross-sectional area within the device is exceeded,

  — Ventilation openings would become blocked or

  — they are in an area in which the electric arc of the circuit breaker is vented.

i IMPORTANT

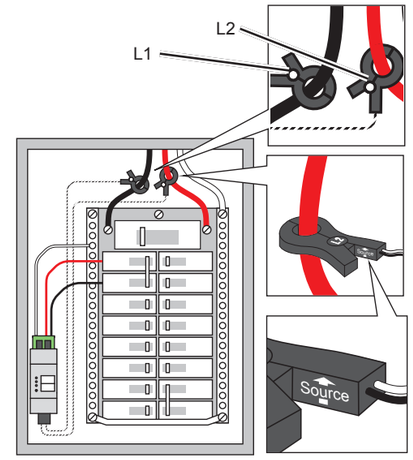
Check for correct phase assignment

— Make sure that the arrow on the CT points in the direction of the utility power source. Otherwise the ES103 will deliver incorrect measurement values.

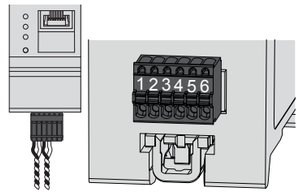
— If the CT is turned around, then the sign of the measured power value will be incorrect.

Procedure:

1. Clamp the CT for phase L1 around the L1 mains voltage input from the meter.
2. Clamp the CT for phase L2 to the L2 mains voltage input from the meter.
3. Connect the CT plug to the CT connection terminal of the ES103 device.
4. Lay the CT cables so that they do not come into direct contact with live connections or bus bars and secure them with a cable tie.



CT pinning table:



Pin	Phase	Wire
1	L1 (A)	Black
2		White
3	L2 (B)	Black
4		White
5	L3 (C)	Black (opt.)
6		White (opt.)

4.3.3 Connecting the power cable

⚠ WARNING

Risk to life due to electric shock or fire

— Carefully remove the cable ties from the power cable without damaging the insulation.

— The voltage inputs of the ES103 (L1, L2, L3 [optional]) require a fuse with maximum rated current of 15A.

— The end user must have the option of disconnecting the ES103 from the mains by means of a freely accessible meter fuse or an additional circuit breaker.

— Check whether, with the cable tie in place, the wires of the power cable fit correctly into the terminals of the circuit breaker and neutral conductor bus bar.

— Make sure that the breaker screws are properly tightened.

NOTICE

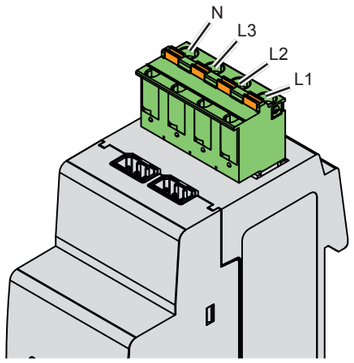
Risk of damage due to wrong length of the wire end ferrule.

— Make sure the length and size of the conductor ends of the power cable meet the requirements of the circuit breaker.

IMPORTANT

Check for correct phase assignment

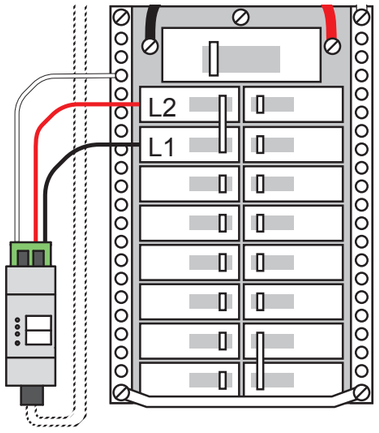
— Make sure that all phases are correctly assigned. If they are not, the ES103 will deliver incorrect measurement values.



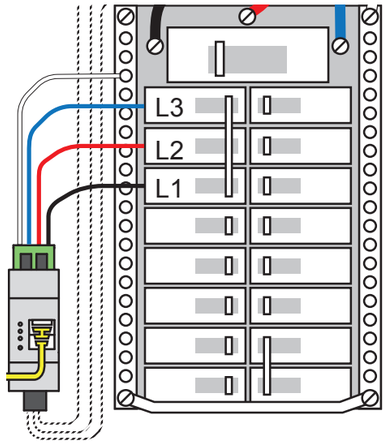
Designation	Explanation
L1 (black)	Line 1 voltage input
L2 (red)	Line 2 voltage input
L3 (blue, optional)	Line 3 voltage input (optional – use for 3-phase applications)
N (white)	Neutral input

Procedure:

1. Connect the power cable connection to the ES103.
2. Split-phase
   - — Connect the black cable to an unused L1 15 A circuit breaker (1-pole 120 V or 2-pole 240 V).
   - — Connect the red cable to an unused L2 15 A circuit breaker or the second input of the 2-pole breaker.
   - — Connect the white cable (neutral conductor) to the neutral bus bar.
3. 3-phase
   - — In addition, use a comparable insulated wire as described in section 7 “Technical data – power cable.”
   - — Plug one side into the power cable connector that is marked L3.
   - — Connect this wire to an unused L3 15 A circuit breaker.



Split-phase



3-phase

4.3.4 Connecting LAN (SMA Energy Meter Protocol) - PREFERRED

The ES103 has a LAN interface for SMA Energy Meter Protocol/”Speedwire” or Modbus TCP.

WARNING

Risk to life due to electric shock

Use of unsuitable cables can lead to serious hazards, malfunctions and damage.

- — Only use network cables with an insulated plug.
- — Observe the requirements for security network cables (NFPA: section 800.179)
  - — Minimum voltage rating - 300 V RMS. A suitable insulation tube or shrink tube must be used for lower rated values.
  - — Min. temperature range: 140 °F (60 °C)

Network cable requirements:

The length and quality of the cable affect the signal quality. Observe the following cable requirements:

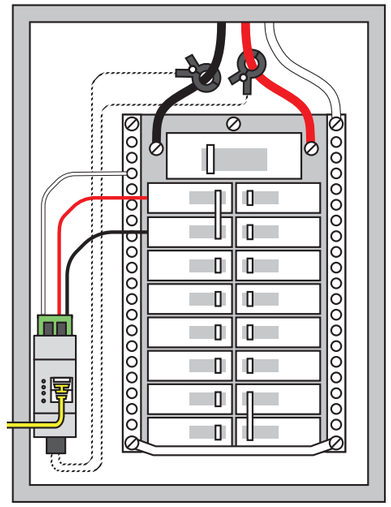
- — Cable type: 100BASE-TX
- — Cable category: Minimum Cat5e
- — Connector type: Cat5, Cat5e, Cat6 or Cat6a RJ45 (Cat7 connectors cannot be used)
- — Shielding: S/UTP, F/UTP or higher
- — Number of conductor pairs and conductor cross-section: at least 2 x 2 x 24 AWG (2 x 2 x 0.22 mm²)
- — Maximum cable length between 2 nodes for patch cable: 164 ft. (50 m)
- — Maximum cable length between 2 nodes for installation cable: 328 ft. (100 m)
- — UV-resistant cable for outside installation with direct exposure to solar radiation.

Additionally required material:

— Network cable for LAN connection

Procedure:

1. Connect the RJ45 connector of the network cable to the device.
2. Connect the other end of the network cable directly to the SMA inverter or to a router/switch.



4.3.5 Connecting RS-485 (Modbus RTU)

Use RS-485 if no LAN connection is possible.

WARNING

Risk to life due to electric shock

Cable requirements:

- — Minimum voltage rating - 300 V RMS
- — Wire cross-section: AWG 24 to 20 (0.20 to 0.50 mm²)
- — Max. cable length: 328 ft. (100 m)
- — Cable type: Solid or multi-strand
- — Min. temperature range: 140 °F (60 °C)
- — Recommendation: Use standard cable, e.g., AlphaWire, designation 2466C. A certified CAT5 to CAT7 cable can also be used as an alternative.

Prerequisites for cable installation:

- — Use mechanical means to ensure that the individual wires of the cable are at least 0.4 in (10 mm) from live parts in the area where the RS-485 interface is connected to the ES103.
- — The communication cable must be routed separately from the power cables in the main service panel and in the installation.

Receiver requirements:

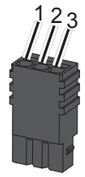
- — The RS-485 interface of the connected device must meet the requirements for safety extra low voltage (SELV).

Additionally required material:

— Cable (twisted pair 2 x 2) for RS-485 connection

Procedure:

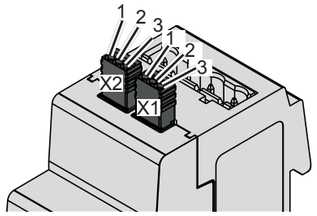
1. Remove 0.8 in (20 mm) of the outer cable sheath.
2. Remove 0.24 in (6 mm) of the insulation from the three wires.
3. Insert the wires in the RS-485 connector of the ES103 as described in the following table:



Connector	Pin	Identification	Description
X1/X2	1	B/D-*	RS-485 B
X1/X2	2	A/D+*	RS-485 A
X1/X2	3	GND	Ground

*SMA Inverter

4. Use a small slotted screwdriver for removal 0.02 in x 0.08 in (0.4 mm x 2 mm).
5. Verify that the wires are fixed correctly in the connector.
6. Plug the connector into a free RS-485 socket on the ES103.
7. Connect the other end of the RS-485 cable directly to the SMA inverter.



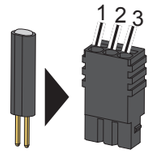
Condition

RS-485 cable length

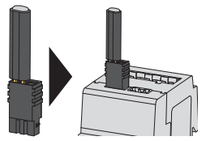
- — Short networks (<32.08 ft. [10 m]) should not require any termination resistors.
- — Longer networks and networks in noisy environments require a 120-Ω termination resistor on both ends of the bus between the “RS-485 A” and “RS-485 B” connections. You can install the termination resistors if you discover network problems.

Procedure:

1. Connect the termination resistor to pin 1 (RS-485 B) and pin 2 (RS-485 A) of the RS-485 connector.



2. Plug the connector with the termination resistor into a free Modbus socket.



4.3.6 Installation checklist

Current Transformer

- ☐ Does the CT arrow point in the direction of the utility meter?
- ☐ Is the CT marked L1 (connector pins 1/2) clamped on the L1 mains voltage input and the CT marked L2 (connector pins 3/4) clamped on the L2 mains voltage input (see section 4.3.2)?
- ☐ Is the connector correctly plugged into the device?
- ☐ Are the connection wires routed so that they cannot come into direct contact with live connections or bus bars?

Mains voltage input

- ☐ Is the black cable connected to L1, the red cable to L2 and the white cable to the neutral conductor?
- ☐ Check whether all cables are securely plugged in the terminal blocks.
- ☐ Is the power cable connector correctly plugged in the device?

Communication cable

- ☐ Is the connector correctly plugged in the device?

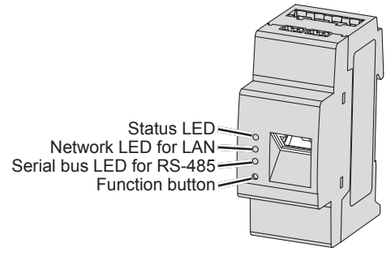
Main service panel

- ☐ Put the dead front cover in place and secure it.
- ☐ Attach the included label to the main service panel in a visible area and note the designation of the breaker to which the ES103 is connected.

After successful installation, switch on the main breaker and the breaker for the device.

5 Operation

5.1 LED signals



LED statuses	
○	Off
● slow	Flashing slowly
● fast	Flashing quickly
●	Permanently on

Status LED	
●	Device ready to operate
●	Device in update mode with active web interface
● 2x	Confirmation for reset to factory default settings
●	Error
●	Firmware update in progress

Network LED	
○	No connection
●	Ethernet link active
●	Communication running
●	Communication error

Serial bus LED	
○	No connection
●	Communication running
●	Communication error

5.2 Commissioning

5.2.1 Setup

1. Install the ES103 as described in section 4 “Installation.”
2. If the device is supplied with current, the status LED illuminates green and remains switched on.

5.2.2 LAN connection

1. Connect the other end of the network cable to a router/switch or directly to the SMA inverter.
2. If the connection is successful and the receiver is active, then the network LED illuminates green or flashes.

5.2.3 RS-485 connection

1. Connect the other end of the network cable to a receiver, e.g., SMA inverter.
2. If the connection is successful and the receiver is active, then the serial bus LED flashes green.

5.3 Operation

5.3.1 Resetting the ES103 to factory settings

Use a pointy object to press the Function button as follows:

1. 1x briefly (0.5 seconds)
2. Then, within 1 second, 1x prolonged (between 3 and 5 seconds)
3. When you have done this successfully, the status LED flashes orange twice.

5.3.2 Restarting the ES103

1. Use a pointy object to press the function button for at least 10 seconds.
2. Alternative: Complete a current cycle by switching off the breaker to which the ES103 is connected (L1), wait for 10 seconds and then switch the breaker back on.

5.3.3 Firmware update

You can find additional information in section 9.

6 Replacing the ES103

⚠ WARNING

Risk to life due to electric shock

— Before beginning installation or maintenance work, switch off the main breaker on the main service panel and secure it against unauthorized activation.
Attention! The cables entering the main switch still carry dangerous voltages.

Procedure:

1. Switch off the main breaker.
2. Remove the dead front cover.
3. Disconnect the power cable, RS-485 or LAN and the current transformers.
4. Replace the device.
5. Connect RS-485 or LAN, the current transformers and the power cable.
6. Fit the dead front cover and secure it.
7. Switch on the main breaker.

7 Technical data

Energy meter set	
Environment	
Ambient temperature during operation	-13 to +131 °F (-25 to +55 °C)
Ambient temperature during transport and storage	-13 to +158 °F (-25 to +70 °C)
Relative humidity (non-condensing)	Up to 75% as an annual average, up to 90% on up to 30 days/year
Max. altitude:	6,561.68 ft. (2,000 m) above sea level
Degree of protection	NEMA 1
Pollution Degree	2

ES103 energy meter	
MEASUREMENT	
Measurement values per channel	Current, voltage (L-N, L-L), power factor Active, reactive and apparent power Active, reactive and apparent energy
Total per unit	Power factor Active, reactive and apparent power Active, reactive and apparent energy Frequency
Measurement interval	200 ms

POWER SUPPLY	
Supply	Voltage input L1/N
Power consumption Pmax	2 W

VOLTAGE INPUTS	
Quantity	4 (L1, L2, L3, N)
Connection type	Plug with push-in cable connector supplied
Cable	AWG 24 ... 12
Overvoltage category	CAT III
UL 248 fuse/breaker rating	Max. 15 A
Mains supply voltage including fluctuations	L-N: 85 to 250 VAC L-L: 85 to 400 VAC
Frequency	50/60 Hz ±5%

CT CURRENT INPUTS	
Quantity	3
Connection type	Plug with push-in cable connector supplied
Cable	AWG 26 ... 20

RS-485 INTERFACE (-R)	
Quantity	1
Connection type	2 plugs with push-in cable connector for daisy-chaining
Cable	AWG 24 ... 20
Type	Half-duplex
Bit rate	9,600 ... 115,200 Baud (Default: 19,200 Baud)
Termination	External possible with terminating connector (included)
Bias voltage	Yes
Max. cable length	328 ft. (100 m) twisted pair with external termination
Data protocol	Modbus RTU
Firmware update	Yes

ETHERNET INTERFACE (-L)	
Quantity	1
Connection type	RJ45 shielded
Type	10/100 Mbit
Characteristics	Auto negotiation, Auto MDI-X
Max. cable length	328 ft. (100 m)
Cable type	CAT5 or higher
Data protocol	Modbus TCP, Energy Meter Protocol/"-Speedwire"
Firmware update	Yes

MEASUREMENT ACCURACY	
Measured variables	Accuracy at full scale value (standard)
Phase current	1.5%
Voltage	0.5%
Total active power	2.0%
Total reactive power	2.0%
Total active energy	2.0%
Power factor	2.0%
Frequency	0.1%

MECHANICAL DATA	
Housing material	Ultramid A3UG5 PA66-GF25 FR
Flame resistance	UL94-V0
Protection class	II
Weight	0.2 lbs. (90 g)
Dimensions not including plug	3.46 x 1.38 x 2.56 in (88 x 35 x 65 mm)

Current transformer CCT1U	
INSTALLATION	
Quantity	2
Preconfigured plug	Yes, one for both CTs
ELECTRICAL SPECIFICATION	
Max. rated voltage	250 V
Overvoltage category	CAT IV
Nominal frequency	50/60 Hz
Rated current	200 A
Accuracy class	Standard
Secondary-side protection against dangerous voltage	Yes
CONNECTION CABLE	
Type	MTW, UL 1015
Length	4 ft. (122 cm)
Conductor size	AWG 20
MECHANICAL SPECIFICATION	
Type	Clamp-on
Weight	0.42 lbs. (190 g)
Length	3.74 in (95 mm)
Width	2.1 in (53.5 mm)
Height	0.58 in (14.8 mm)
Opening	0.94 in (24 mm)

Power cable	
Type	XHHW
Length	3 ft. (0.9144 m)
Wires	3 (L1-black, L2-red, N-white)
Conductor size	AWG 14

Termination plug	
Quantity	1
Resistance value	120 Ω

Mounting adapter	
Material	Ultramid A3UG5 PA66-GF25 FR
Flame resistance	UL94-V0
Length	5.12 in (130 mm)
Width	1.79 in (45.5 mm)
Height	1.61 in (40.9 mm)
Installation type	Magnetic/duct tape
Magnets	2

8 Information on compliance with regulations

US regulations	
Product safety	UL 2808
EMC	FCC 47 CFR Part 15B
TSCA section 6(h)	Compliant
California Proposition 65	⚠ **WARNING:** This product can expose you to chemicals including nickel which is known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.
Canadian regulations	
Product safety	CAN/CSA C22.2 No. 61010-1, 61010-2-030
EMC	ICES-003

ℹ

— 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 shall accept any interference received, including interference that may cause undesired operation.

— 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 environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications.

9 Contact

If you have technical problems with our products, please contact Customer Service. Customer Service will require the following data to provide you with the help you need:

— Type and serial number of the energy meter.
— Type and serial number of the communication products connected
— Type of communication
— Firmware version
— Event message of the communication products connected
— LED status of the energy meter (see section 5. Operation)
— Description of the problem

You can find contact information for your country at:

https://go.sma.de/service

You can find additional product information at:

https://www.sma-america.com/products/monitoring-control/sma-energy-meter-us

Distributed by:

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3925 Atherton Rd
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United States of America

10 Supplier

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424 Network Station
Chesapeake, VA 23320
United States of America

Manufactured in Germany