

# COUNTIS E

Energy meters

2017



your energy  
our expertise





# COUNTIS E43x

## Energy meters

Three-phase - up to 6000 A via CT

Energy meters



COUNTIS E43X

### The solution for

- > High Rise Building
- > Industry
- > Infrastructure
- > Data centres



### Strong points

- > RS485 communication (MODBUS) and pulse output
- > Multi-parameter measurement and load curves

### Conformity to standards

- > IEC 62053-22



### Overview

The SOCOME C COUNTIS E43X Meter is a three-phase four-wire rail-mounted energy meter, able to measure both active and reactive energy via CT connection. Featuring up to 4 rates, it supports RS485 communication.

### Functions

The COUNTIS E43x utilizes a modular design, with both active and reactive energy values (kWh, kvarh) directly displayed on a backlit LCD monitor. This series of meters works in three-phase electricity networks via CT input.

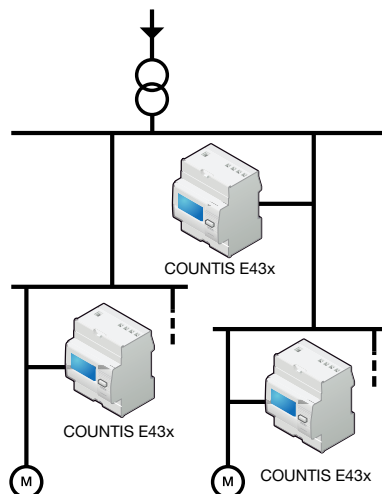
### General Characteristics

- Measurement accuracy: 0.5
- LCD display

### Advantages

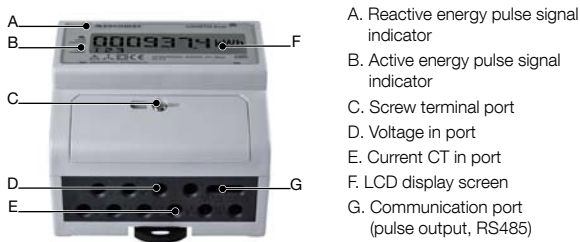
- RS485 communication (MODBUS) or pulse output.
- To enable remote transmission of energy consumption, the COUNTIS E43x series of products offers pulse output and RS485 communication output (using MODBUS).
- In addition, for the remote transmission function, COUNTIS E43x with RS485 products can be configured remotely and collect multiple electrical parameters via communication.
- Multi-function measurement and load curves.
- Display of electrical parameters (I, U, V, P, Q, S, PF).

### Applications

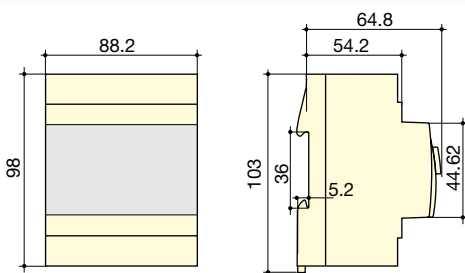


Model	Key functions
E43X	RS485 MODBUS communication + pulse output

#### Front panel



#### Dimensions



Type	Modular
Quantity	5
Dimensions Width x Height x Depth	88.2 x 103 x 64.8 mm
Case protection rating	IP20
Panel protection rating	IP51
Type of display	Backlit LCD display
Rigid cable connection section	1.5 - 10 mm <sup>2</sup>
Flexible cable connection section	1 - 6 mm <sup>2</sup>

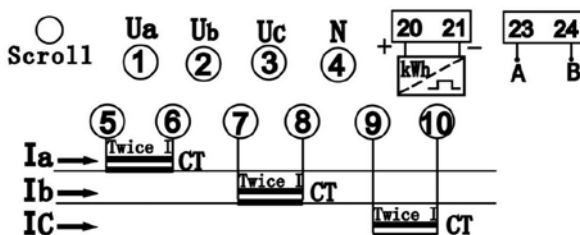
#### Electrical characteristics

Communication	
Interface	RS485
Type	2 wires or 3 half duplex wires
Protocol	MODBUS RTU
MODBUS <sup>®</sup> speed	9600 bauds

#### Connection

##### Recommendation:

- For IT earthing systems, it is recommended that the CT secondary is not grounded to earth.



#### Features and technical parameters

##### Features

- Measure three-phase active and reactive energy, analyse power quality and load conditions
- Standard DIN-RAIL mounting (conforms to German industry standard)
- CT input, supports 3x1.5(6)A.
- RS485 communication supported, protocol: Modbus-RTU
- LCD backlit for easy power readings in low light
- Automated cycling of LCD display data
- Casing material: Fire-retardant ABS

##### Technical Parameters

Item	Specification
Standard	IEC62053-22 2003
Rated voltage	3 x 230/400 V ± 20%
Nominal (maximum) current	1.5 (6) A
Pulse constant	12000 imp/kWh
Frequency	50 - 60 Hz
Accuracy rating	0.5
Display	6 + 2 LCD monitor
Operating temperature	- 20 to 70 °C
Storage temperature	- 45 to 80 °C
Power consumption	< 1 W and 7 VA
Average humidity	≤ 75%
Startup current	< 0.4% Ib
Material	Casing: ABS+PC alloy, hook: ABS

#### Mounting instructions

1. Select a 35 mm standard rail (length as required), and secure to the chosen position for mounting.
2. Fit the meter into the rail and pull the spring clips down, see Fig. 1.
3. As shown in Fig. 3, let the clips go to mount the meter onto the rail (see Fig. 4).
4. Connect as shown in the wiring diagram
5. Once connected, screw on the cover.



Fig. 1



Fig. 2



Fig. 3



Fig. 4

#### References

Type	COUNTIS E43X
CT input with RS485 MOSBUS communication <sup>(1)</sup>	Reference
	48C0 3017

(1) 4 rates are available via RS485 communication



# COUNTIS E33x

## Energy meters

Three-phase - direct 120 A

Energy meters



COUNTIS E33X

### The solution for

- > High Rise Building
- > Industry
- > Public buildings
- > Data centres



### Strong points

- > RS485 communication (MODBUS) and pulse output
- > Multi-parameter measurement and load acquisition

### Conformity to standards

- > IEC62053-22



### Overview

The SOCOMEC COUNTIS E33X meter is a three-phase four-wire rail-mounted energy meter with direct connection of 120 A current. Used to accumulate both active and reactive energy, and save the data to an internal memory, it supports RS485 communication and multiple-rate metering, and is suited to all electrical monitoring systems.

### Functions

The COUNTIS E33X is a modular active electrical energy meter which can directly display both total active (kWh) and reactive energy (kVarh) on a backlit LCD screen. This series of products is intended for three-phase load metering for direct connections to 120 A.

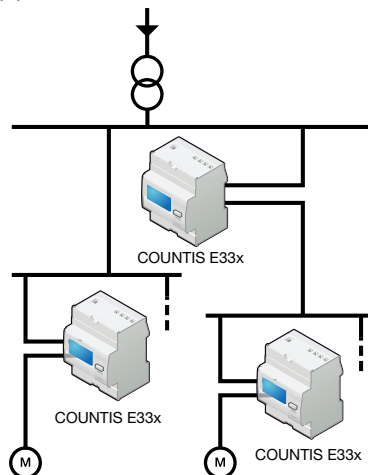
### General Characteristics

- Measurement accuracy: 0.5
- Backlit LCD display

### Advantages

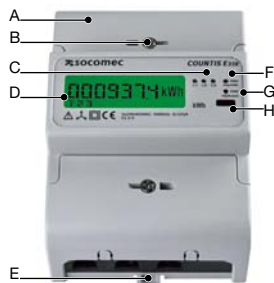
- RS485 communication (MODBUS) or pulse output.
- To enable remote transmission of energy consumption, the COUNTIS E33x offers pulse output and RS485 communication output featuring the Modbus protocol.
- In addition, for the remote transmission function, COUNTIS E3x with RS485 products can be configured remotely and collect multiple electrical parameters.
- Multi-parameter measurement and load curves.
- Multiple electrical parameters (I, U, V, P, Q, S, PF).

### Applications



Model	Key functions
E33x	RS485 MODBUS communication + pulse output

#### Front panel



- A. Input port
- B. Screw terminal port
- C. L1, L2 and L3 3-phase voltage signal indicators
- D. LCD display
- E. Output port
- F. Active energy pulse signal indicator
- G. Reactive energy pulse signal indicator
- H. Infrared communication terminal

#### Features and technical parameters

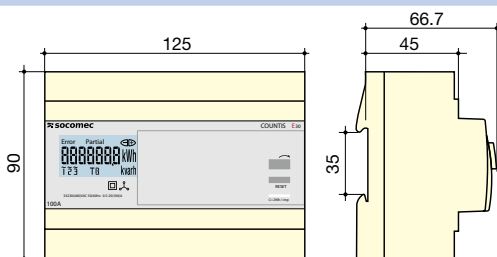
##### Features

- Measure three-phase active and reactive energy, analyse power quality and load conditions
- Standard DIN-RAIL mounting (conforms to German industry standard)
- Direct input of 120 A current
- RS485 communication supported, protocol: Modbus-RTU
- Multiple rate function supported
- LCD backlit for easy power readings in low light
- Automated cycling of LCD display data
- Casing material: Fire-retardant ABS

##### Technical parameters

Item	Specification
Standard:	IEC62053-22 2003
Rated voltage	3 x 230/400 V ± 20%
Nominal (maximum) current:	5 (120) A
Pulse constant:	1600 imp/kWh
Frequency:	50 Hz
Accuracy rating:	0,5
Display:	LCD monitor
Operating temperature:	-20 to 70 °C
Material:	Casing: ABS+PC alloy, hook: ABS

#### Dimensions



Type	Modular
No. of modules	5
Dimensions Width x Height x Depth	90 x 125 x 66.7 mm
Case protection rating	IP20
Panel protection rating	IP51
Type of display	Backlit LCD display
Rigid cable connection section	2.5 to 35 mm <sup>2</sup>
Flexible cable connection section	2.5 to 35 mm <sup>2</sup>

#### Mounting instructions

1. Select a 35 mm standard rail (length as required), and secure to the chosen position for mounting.
2. Push the clips down one tooth, see Figs.1 and 2.
3. As shown in Fig. 3, fit the meter into the rail, then push the clips up a tooth to mount the meter onto the rail (see Fig. 4).



Fig. 1



Fig. 2

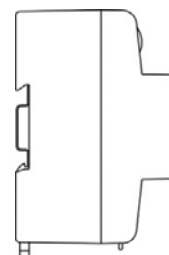


Fig. 3

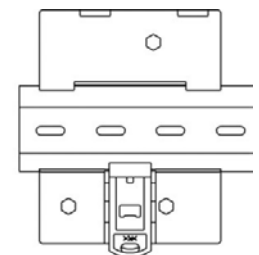


Fig. 4

#### Electrical characteristics

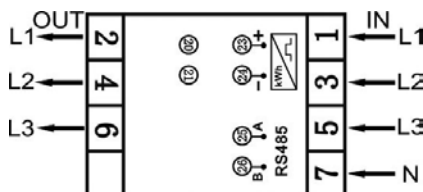
Communication	
Interface	RS485
Type	2 wires or 3 half duplex wires
Protocol	MODBUS RTU
MODBUS <sup>®</sup> speed	9600 bauds

#### Display screen



LCD content

#### Connection



#### References

Type	COUNTIS E33X
120 A direct with RS485 MODBUS communication <sup>(1)</sup>	Reference
	48C0 3012

<sup>(1)</sup> 4 rates are available via RS485 communication



# COUNTIS E13x

## Energy meters

Single-phase - direct 100 A

Energy meters



COUNTIS E13X

### The solution for

- > High Rise Building
- > Outdoor venues
- > Docks
- > Data centres
- > Shopping centres



### Strong points

- > Compact
- > RS485 communication (MODBUS)

### Conformity to standards

- > IEC 62053-21



### Overview

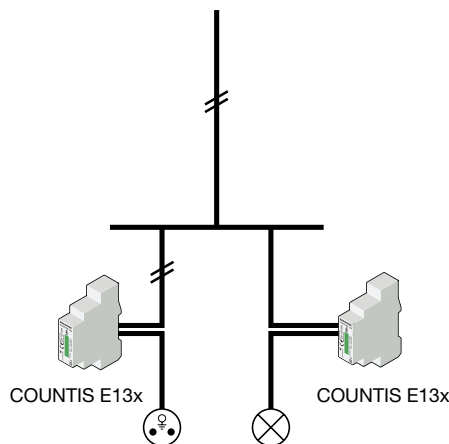
The SOCOMEC COUNTIS E13X Meter is an energy meter designed for single-phase metering and direct connection to 100 A. With multifunction monitoring and compact size in one module, it supports RS485 communication and is suited to domestic and commercial power distribution systems.

### Functions

COUNTIS E13x is a modular electrical energy meter which can display both total active energy (kwh) and total reactive energy (kvarh) on an LCD screen.

The meter is intended to record single-phase load energy, with direct connection to 100 A.

### Applications



### General Characteristics

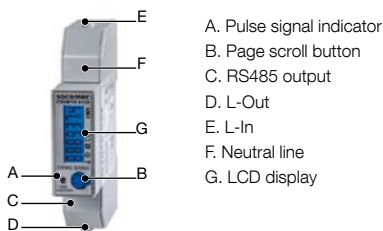
- Compact design
- Measurement accuracy: 1
- LCD display

### Advantages

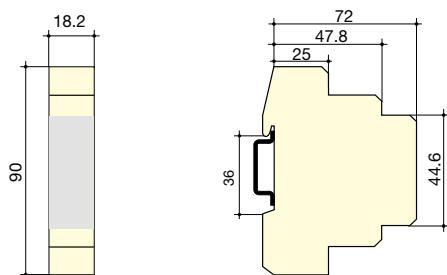
- Compact size, one module.
- RS485 communication (MODBUS).
- Energy values can be remotely transmitted via the communication output to a (PC/BMS/etc.) system for billing analysis, energy saving or energy cost management.

Model	Key functions
E13x	MODBUS RS485 communication

#### Panel



#### Dimensions

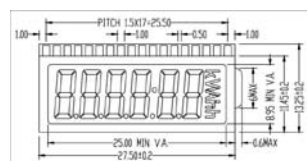


COUNTIS E13X	
Type	Modular
No. of modules	1
Dimensions Width x Height x Depth	18.2 x 95.3 x 72
Case protection rating	IP 20
Panel protection rating	IP 51
Type of display	LCD 5+1 bit
Rigid cable connection section	10 mm <sup>2</sup>
Flexible cable connection section	10 mm <sup>2</sup>

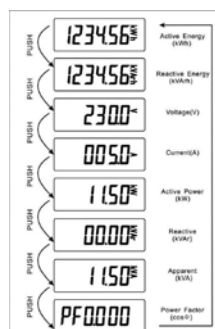
#### Electrical characteristics

Communication	COUNTIS E13X
Interface	RS485
Type	2 wires or 3 half duplex wires
Protocol	MODBUS RTU
MODBUS speed	9600 bauds

#### Display screen



LCD display dimensions



LCD screen parameter display/switching

#### Connection



Note: 23, 24 and 25 correspond respectively to A-, G and B+. If the RS485 communication converter has no G port, this can be left unconnected. The neutral wire may either connect to one of the N ports, or it may simultaneously connect to both N ports.

#### Features and technical parameters

##### Features

- Allows reading of network electrical parameters within a defined period of time, analysis of power quality and load conditions
- Standard DIN-RAIL mounting (conforms to German industry standard)
- Direct connection up to 100A current, only 18 mm wide
- RS485 communication supported, protocol: Modbus-RTU
- Multiple rate functionality Once a user configures the time period via RS485 communication, the meter will measure energy consumed in each different time period
- Meter comes with batteries to support multiple rate functionality. RTC accuracy as high as 0.5 seconds/day
- Blue backlit LCD screen may be read easily even in low light
- Current and voltage display
- Accurate measurement of active and reactive energy
- Displays data in two different ways:
  - a. Automated cycling of data display at 5 second time intervals
  - b. Checking of data via an external button
- Casing material: Fire-retardant ABS
- Protection rating: IP51 (Interior energy meters)

##### Technical Parameters

Item	Specification
Standard:	IEC62053-21
Rated voltage	230V ± 20%
Rated current:	5(100) A
Pulse constant:	1000 Imp/kWh
Frequency:	50 - 60 Hz
Accuracy rating:	1.0
Display:	LCD 5+1 = 99999.9 kW
Operating temperature:	-20-65 °C
Power consumption:	≤ 8 VA
Average humidity:	≤ 75 %
Maximum humidity:	≤ 95 %
Startup current:	0.004 Ib
Red light flashing:	Pulse indicator, width = 90 ms
Material:	Casing: ABS+PC alloy, hook: ABS

#### Mounting instructions

1. Select a 35 mm standard rail (length as required), and secure to the chosen position for mounting.
2. Push the clips down one tooth, see Figs. 1 and 2.
3. As shown in Fig. 3, fit the meter into the rail, then push the clips up a tooth to mount the meter onto the rail (see Fig. 4).
4. Connect as shown in the wiring diagram.
5. After connecting, seal the wiring cover with lead seals.



Fig. 1



Fig. 2

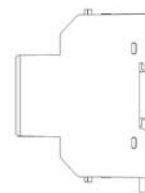


Fig. 3

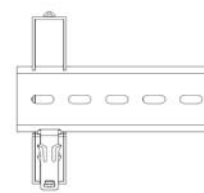


Fig. 4

#### References

Type	COUNTIS E13X Reference
100 A direct - with MODBUS communication via RS485	48C0 3031

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our expertise

