

COUNTIS E

Modular active energy meters

direct 80 A or via current transformers



The solution for

- Data centre
- Energy
- Building

Strong points

- Ethernet communication with embedded webserver
- MID certification
- Multi-tariff
- Complete ecosystem for easy integration

Associated products

- For a complete ecosystem, combine with a DIRIS Digiware M-70 or D-70 communication gateway.



DIRIS Digiware M-70 & D-70

Conformity to standards

- IEC 62053-21 classe 1
- IEC 62053-23 classe 2
- IEC 62053-31
- IEC 62052-11
- EN 50470-1
- EN 50470-3

Function

COUNTIS E is a range of modular electrical energy meters that provide an overview of energy consumed and produced, and also display power information and other measurements directly on the backlit LCD.

COUNTIS E meters have native Ethernet communication capability and are fully integrated into the SOCOMEC monitoring ecosystem including Webview, screens, gateways and configuration software.

Advantages

Ethernet communication with embedded webserver

COUNTIS E meters have native built-in Ethernet communication which enables data to be read remotely through MODBUS TCP protocol. Additionally, all meter information can be analysed through its integrated webserver page.

MID certification

The whole range complies with the MID directive to guarantee accuracy and reliability when metering, compulsory for energy billing applications. The "module B+D" certification attests that an external laboratory has verified the design and production process of these devices.

Multi-tariff

Up to 4 tariffs enable the assignment of different time slots (every hour, dip times) or different sources (normal, back-up) to your energy readings, enabling you to monitor your energy consumption in detail.

Complete ecosystem for easy integration

COUNTIS E meters are natively compatible with the WEBVIEW energy monitoring software. Thanks to the automatic detection of the meters for quick configuration, this software is very easy to use. It is accessible via a DIRIS Digiware M-70 or D-70 gateway.

Functions

Embedded webserver

I	I1 A	I2 A	I3 A	IN A
Inst.	00.16	00.95	00.36	01.02
V	V1 V	V2 V	V3 V	V sys V
Inst.	238.8	237.4	238.1	238.1
U	U12 V	U23 V	U31 V	U sys V
Inst.	412.6	410.7	414.1	412.4
F Hz	Ph Seq	I sys A		
50.03	123	00.49		

Instantaneous values

- Instantaneous view of key electrical parameters: Current (I), Voltage (U,V), Frequency (F), Power (P,Q,S), Power factor (PF)...

Compteur tarifaire	Ea+ kWh	Ea- kWh	Er+ Inductif kvarh	Er+ Capacitif kvarh	Er+ Total kvarh	Er- Inductif kvarh	Er- Capacitif kvarh	Er- Total kvarh	Es kVAh
1	1740.67	0.00	2.07	0.00	2.07	0.00	2335.28	2589.02	3878.01
2	170.45	0.00	0.00	0.00	2335.29	0.00	253.72	2.07	396.67
Total	1911.13	0.00	2.07	0.00	2337.36	0.00	2589.02	2591.09	4274.68

Compteur tarifaire	Ea+ kWh	Ea- kWh
1	1155.52	0.00
2	170.45	0.00
Somme	1355.97	0.00

Tariff

- View up to 4 tariffs and the associated energy in kWh, Kvarh and KVAh

Activer: Cadence: 5 min

Sél. tout Désél. tout Appliquer Télécharger Effacer

COMPTEURS TOTAUX	
Ea+ <input checked="" type="checkbox"/>	Ea- <input checked="" type="checkbox"/>
Er+ Inductif <input checked="" type="checkbox"/>	Er- Inductif <input checked="" type="checkbox"/>
Er+ Capacitif <input checked="" type="checkbox"/>	Er- Capacitif <input checked="" type="checkbox"/>
Er+ Total <input checked="" type="checkbox"/>	Er- Total <input checked="" type="checkbox"/>
Es <input checked="" type="checkbox"/>	

COMPTEURS PARTIELS	
Ea+ <input checked="" type="checkbox"/>	Ea- <input checked="" type="checkbox"/>
Er+ <input checked="" type="checkbox"/>	Er- <input checked="" type="checkbox"/>
Es <input checked="" type="checkbox"/>	

BILAN ENERGETIQUE	
Ea <input checked="" type="checkbox"/>	Er <input checked="" type="checkbox"/>

Recording

- 8Mb of memory
- 1 value recorded every 15mins → memory of 2500 days
- 4 values recorded every 15mins → memory of 1300 days
- 16 parameters available for recording
- Data can be exported to a .csv file

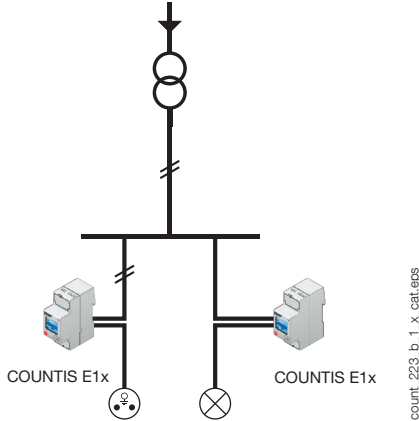
COUNTIS E18

Active-energy meter

single-phase - direct 80 A

Countis E18

Functional diagram



Electrical characteristics

Measurement of currents

Type	Single-phase - direct 80 A
Input consumption	Max. 0.5 VA
Inrush current (I _{cfst} /c _f)	20 mA
Minimum current (I _{min})	0.25 A
Transient current (I _{cftr} /c _f)	0.5 A
Reference current (I _{ref})	5 A
Permanent overload (I _{max})	80 A
Transient overload	30 I _{max} over 10 ms

Voltage measurement

Measurement range	230 to 240 V ± 20%
Consumption (VA)	3.5 VA max.
Permanent overload	290 V phase-neutral

Power monitoring accuracy

Active (according to IEC 62053-21)	Class 1
Active (according to EN 50470)	Class B
Reactive (according to IEC 62053-22)	Class 2

Power supply

Self-powered	Yes
Frequency	50/60 Hz

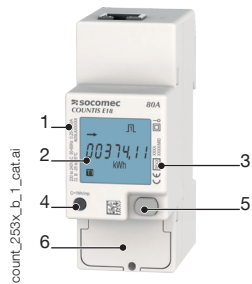
Operating conditions

Operating temperature	-25 to 55°C
Storage temperature	-25 to 75°C
Relative humidity	80%

Communication

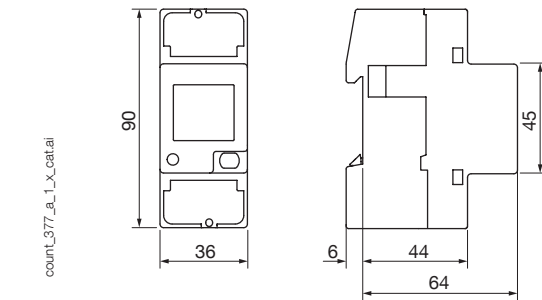
	COUNTIS E18
Link	RJ45
Type	Bi-directional mode (full duplex)
Protocol	MODBUS TCP, HTTP, NTP, DHCP
Baudrate	10/100 Mbps

Front panel



1. Serial number.
2. Backlit LCD.
3. MID marking
4. Metrological LED.
5. Navigation button.
6. Voltage, current, neutral terminals with terminal shrouds

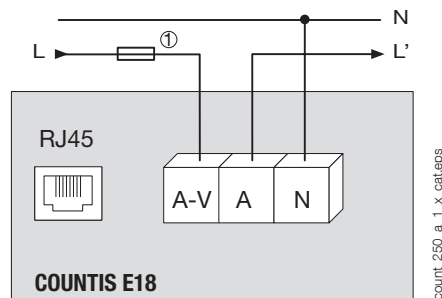
Dimensions (mm)



Type	Modular
Number of modules	2
Dimensions W x H x D	36 x 90 x 64 mm
Casing protection degree	IP 20
Front panel protection degree	IP 51 ⁽¹⁾
Display type	Backlit LCD
Cross-section of rigid connecting cable	1.5 to 35 mm ²
Cross-section of flexible connecting cable	1.5 to 35 mm ²
Weight	215 g

(1) Cabinet installations require a protection degree of at least IP51.

Connections



References

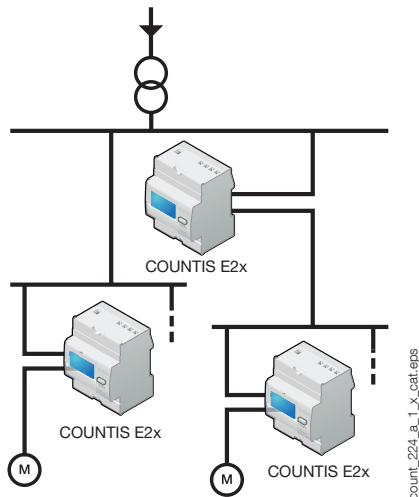
COUNTIS

E18	Direct 80 A - Dual-tariff + Ethernet Modbus TCP communication + MID	4850 3048
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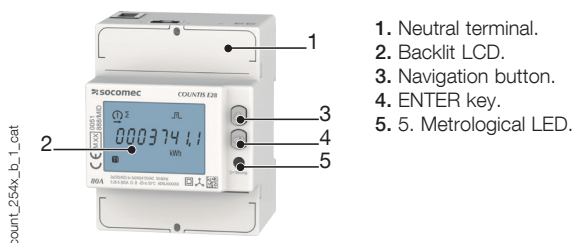
Accessories	Available for order in multiples of	Reference
10x sealing kits, 2U		4850 306U
Fuse disconnect switches for voltage input protection (RM type) 1-pole	6	5703 5001
gG 22x58 80 A fuses	10	6032 0080

Countis E28

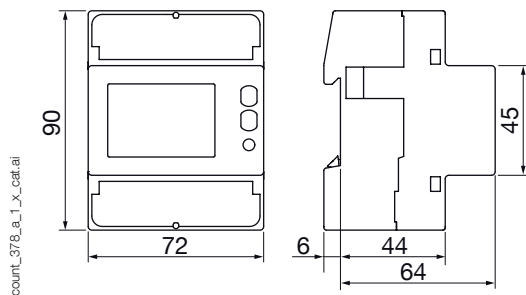
Functional diagram



Front panel



Dimensions (mm)



Type	Modular
Number of modules	4
Dimensions W x H x D	72 x 90 x 64 mm
Casing protection degree	IP 20
Front panel protection degree	IP 51 ⁽¹⁾
Display type	Backlit LCD, 8 digits
Cross-section of rigid connecting cable	1.5 to 35 mm ²
Cross-section of flexible connecting cable	1.5 to 35 mm ²
Weight	440 g

⁽¹⁾ Cabinet installations require a protection degree of at least IP51.

References

COUNTIS		
E28	Direct 80 A - Dual-tariff + Ethernet Modbus TCP + MID	4850 3055
Accessories	Available for order in multiples of	Reference
Panel mounting kit, 4 modules		192J 8015
10x sealing kits, 4U*		4850 309U
Fuse disconnect switches for voltage input protection (RM type) 3-pole	2	5703 5003
gG 22x58 80 A fuses	10	6032 0080

* seal kits are supplied with MID counters

Electrical characteristics

Measurement of currents

Type	Three-phase - direct 80 A
Input consumption	0.5 VA max. per phase
Inrush current (I _{cfst} /c _f)	20 mA
Minimum current (I _{min})	0.25 A
Transient current (I _{cftr} /c _f)	0.5 A
Reference current (I _{ref})	5 A
Permanent overload (I _{max})	80 A
Transient overload	30 I _{max} over 10 ms

Voltage measurement

Measurement range	230 to 240 V ±20%
Consumption (VA)	3.5 VA max. (1 W) per phase
Permanent overload	290 V phase-neutral / 500 V phase-phase

Power monitoring accuracy

Active (according to IEC 62053-21)	Class 1
Active (according to EN 50470)	Class B
Reactive (according to IEC 62053-22)	Class 2

Power supply

Self-powered	Yes
Frequency	50/60 Hz

Output (pulses)

Optocoupler (IEC 62053-31)	27VDC 27mA max.
Number	1
Fixed pulse	100 Wh
Pulse duration	50 ± 2 ms ON time 30 ± 2 ms OFF time

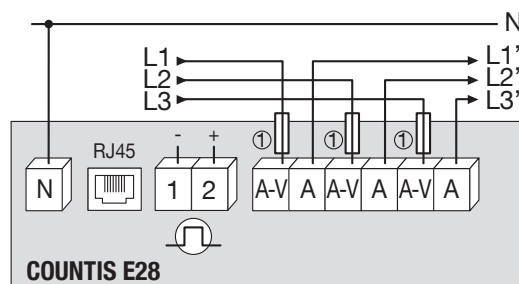
Operating conditions

Operating temperature	-25 to 55°C
Storage temperature	-25 to 75°C
Relative humidity	80%

Communication

	COUNTIS E28
Link	RJ45
Type	Bi-directional mode (full duplex)
Protocol	MODBUS TCP, HTTP, NTP, DHCP
Baudrate	10/100 Mbps

Connections



1. Fuses 0,5 A gG/0,5 A classe CC

IMPORTANT: Neutral connection is mandatory on COUNTIS E28 (neutral is represented by the solid line in the image opposite).

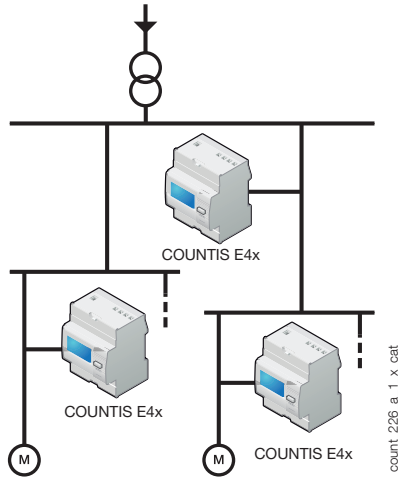
COUNTIS E48

Active-energy meter

three-phase - connection to current transformers

Countis E48

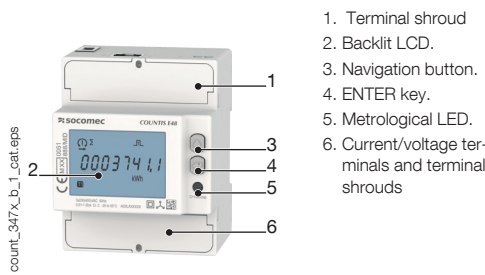
Functional diagram



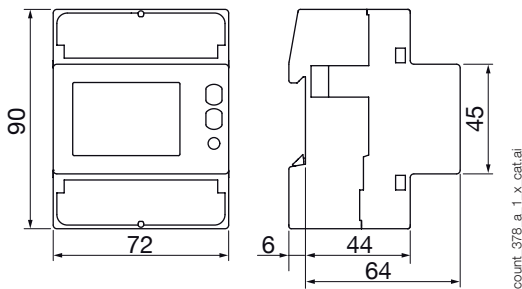
Electrical characteristics

Current measurement	
Type	Three-phase on CT 1 and 5A up to 12000 A
Input consumption	0.5 VA max. per phase
Inrush current (I _{cfst/cf})	1 mA - Class C 2 mA - Class 1
Minimum current (I _{min})	10 mA
Transient current (I _{cftr/cf})	50 mA
Reference current (I _{ref})	1 A
Permanent overload (I _{max})	6 A
Transient overload	120 A for 0.5 s
Voltage measurement	
Measurement range	230 to 240 V ± 20%
Consumption (VA)	Max. 3.5 VA (1 W) per phase
Permanent overload	290 V phase-neutral / 500 V phase-phase
Power monitoring accuracy	
Active (according to IEC 62053-21)	Class 1
Active (according to EN 50470)	Class C
Reactive (according to IEC 62053-22)	Class 2
Power supply	
Self-powered	Yes
Frequency	50 / 60 Hz
Output (pulses)	
Number	1
Type of optical coupler	27 V DC - 27 mA
Pulses	1 Wh ⇒ TC = 1 to 4
	5 Wh ⇒ TC = 5 to 24
	25 Wh ⇒ TC = 25 to 124
	125 Wh ⇒ TC = 125 to 624
	1000 Wh ⇒ TC = 625 to 3124 10000 Wh ⇒ TC = 3125 to 12000
Pulse duration	50 ± 2 ms ON time 30 ± 2 ms OFF time
Environment	
Operating temperature	-25 to +55°C
Storage temperature	-25 to +75°C
Relative humidity	80%
Communication	
COUNTIS E48	
Link	RJ45
Type	Bi-directional mode (full duplex)
Protocol	MODBUS CTP, HTTP, NTP, DHCP
Baudrate	10/100 Mbps

Front panel



Dimensions (mm)

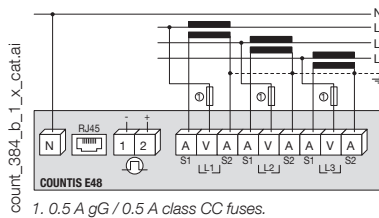


Type	Modular
Number of modules	4
Dimensions W x H x D	72 x 90 x 64 mm
Casing protection degree	IP20
Front panel protection degree	IP51
Display type	Backlit LCD, 8 digits
Cross-section of rigid connecting cable	1.5 to 6 mm ²
Cross-section of flexible connecting cable	1.5 to 6 mm ²
Weight	322 g

We recommend:

- Connecting CT secondaries is strictly prohibited with IT earthing arrangements; it is, however, optional in TT/TN earthing arrangements.

- When disconnecting the COUNTIS device, it is essential to short-circuit the secondaries of each current transformer. This operation can be carried out automatically by a PTI, which can be found in the SOCOMEC catalogue. Contact us



ATTENTION : The neutral conductor must be connected on models COUNTIS E48 (the neutral conductor is represented by the solid line in the image).

References

COUNTIS

E48	Via CT - Dual-tariff + communication via Ethernet Modbus CTP + MID ⁽¹⁾	4850 3057
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(1) 4-tariff via RS485 communication.

Accessories	Available for order in multiples of	Reference
Panel mounting kit, 4 modules		192J 8015
10x sealing kits, 4U*		4850 309U
Fuse disconnect switches to protect 3-pole voltage inputs(RM type)	2	5703 5003
gG 10x38 0,5 A fuses	10	6032 0080

* seal kits are supplied with MID counters

