

COUNTIS P4x

Modular active-energy meters

three-phase - connection via transformers up to 10 000 A



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Function

COUNTIS P4x are three-phase modular electrical energy meters that enable viewing of the different energies consumed and produced, and also of powers and other measurements directly on the backlit LCD display. They connect indirectly via a wide range of current transformers and current sensors.

They are suitable for use in sub-billing applications thanks to their MID certification.

Advantages

Quick and easy wiring

The COUNTIS P4x range is compatible, depending on the model, with:

- QCT-C-xx three-phase current transformers thanks to an RJ12 "QuickConnect" connection (one cable for the 3 phases).
- Rogowski coils, suitable for all sizes of cables or bars.
- Current transformers with 1/5A output.

MID certification

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.

Versatile

- Wide operating temperature range from -40 to +70°C.
- Possibility of connection to a single-phase network with possible per-phase reading of energies.

Complete ecosystem for easy integration

COUNTIS P4x 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.

Multi-interfaces

COUNTIS P4x meters are equipped with:

- Two pulse outputs, enabling energy information to be sent in the form of pulses.
- An RS485 (MODBUS RTU) or M-BUS communication output, which enables all meter data to be read remotely via the communication protocol.
- A digital input to manage 2 tariffs, or up to 4 tariffs via communication, to distinguish between consumption according to tariff periods.

Space-saving

A single meter to measure up to 2 (2QCT) or 4 (4QCT) loads for real space saving in the enclosure.

The solution for

- > Energy
- > Industry
- > Buildings

Strong points

- > Quick and easy wiring
- > MID certification
- > Versatile
- > Complete ecosystem for easy integration
- > Multi-interfaces
- > Space-saving

Associated products

For a complete ecosystem, combine with a communication gateway and current sensors and current transformers



Conformity to standards

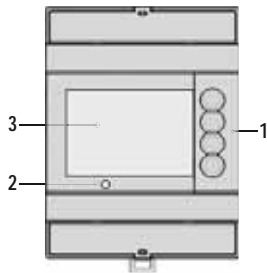
- > IEC 62053-21
- > IEC 62053-23
- > IEC 62053-31
- > IEC 62052-11
- > IEC 61010-1
- > EN 50470-1
- > EN 50470-3



COUNTIS P44/P46

Front panel

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1. Backlit LCD display
2. Metrological LED
3. Buttons

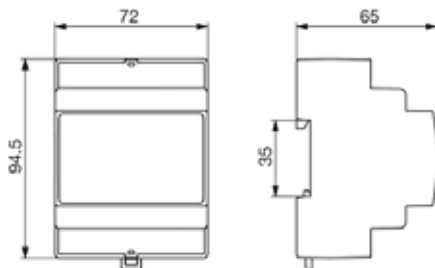
Electrical characteristics

Current measurement (TRMS)	
Type	Three-phase - indirect 1/5 A
Transient overload	20 I _{max} 0.5 s
Startup current (I _{st})	0.01 A
Base current (I _b)	5 A
Minimum current (I _{min})	0.25 A
Maximum Current (I _{max})	6 A
Voltage measurement (TRMS)	
Overvoltage category	300 V CAT III - UC1 in accordance with IEC 61010-1
AC voltage (U _n)	400 V, Overvoltage category III
Voltage range	320 - 480 VAC
Frequency	45-55Hz (MID), 45-65Hz (IEC)

Transient overvoltage withstand	4 kV 1 minute, 6kV 1.2 μs	
Measurement accuracy		
U, V / I / F / P, Q, S / PF	0.5% / 1% / 0.2% / 1% / 1% in accordance with IEC61557-12	
Active energy	Class C in accordance with EN 50470-1/3 Class 0.5s in accordance with IEC 62053-21	
Reactive energy	Class 2 in accordance with IEC 62053-23	
Tariff management	2 tariffs, via 0-230 V digital input 4 tariffs, via communication	
Power supply		
Auxiliary power supply	85-276 VAC or 120-240 VDC	
Max. consumption	3 VA	
Pulse output		
Number	2	
Type of optocoupler	5-27 VDC - 27 mA max.	
Pulse duration	60 / 100 / 200 ms	
Pulse output 1	Configurable: 0.01 / 0.1 / 1 / 10 / 100 / 1000 kWh per pulse	
Pulse output 2	fixed at 0.3125 Wh/pulse (not affected by CT ratio)	
Environment		
Operating temperature	-40 to +70°C	
Ambient storage temperature	-40 to +75°C	
Relative humidity	0 to 95%, condensation-free	
Communication		
	P44	P46
Link	RS485	EN 13757-2
Type	2-wire half duplex	2-wire half duplex
Protocol	Modbus RTU	M-BUS
Speed	2.4 / 4.8 / 9.6 / 19.2 / 38.4 kbps	300 / 600 / 1.2 k / 2.4 k / 4.8 k / 9.6 k bps

Dimensions (mm)

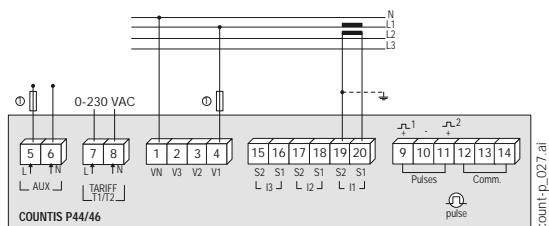
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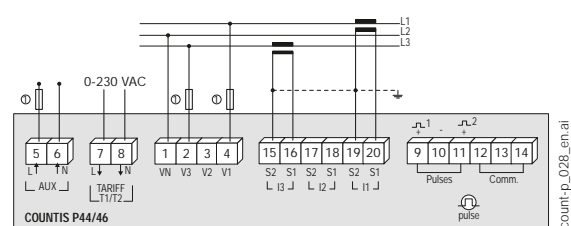
Type	modular
Number of modules	4
Front degree of protection	IP 51
Case degree of protection	IP20
Dimensions W x H x D	72 x 94.5 x 65 mm
Display type	Backlit LCD display
Connection cross-section and torque for measuring terminals (A & V)	0.5...2.5 mm ² / 0.2 Nm
Connection cross-section and torque for terminals S0, COM, tariff input	0.5...2.5 mm ² / 0.2 Nm

Connections

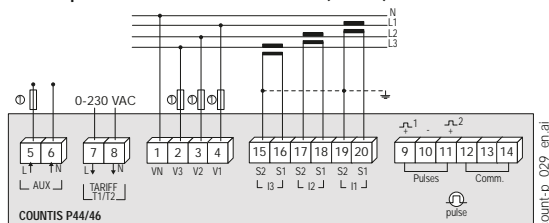
Single-phase, 2-wire with 1 CT (1P+N)



Three-phase, 3-wires with 2 CTs (3P)

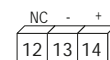


Three-phase, 4-wires with 3 CTs (3P+N)

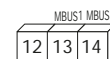


N - L: network input.
N' - L': network output.

Communication terminals for RS485



Communication terminals for M-bus



1. 1 A gG / 1 A class CC fuses.

References

COUNTIS P4x

P44	Indirect three-phase via 1/5A CT - 2 pulse outputs + MODBUS RS485 communication + MID	4850 5044
P46	Indirect three-phase via 1/5A CT - 2 pulse outputs + M-BUS communication + MID	4850 5046

COUNTIS P4x

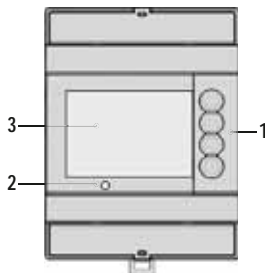
Modular active-energy meters

three-phase - connection via transformers up to 10 000 A

COUNTIS P44 RGW

Front panel

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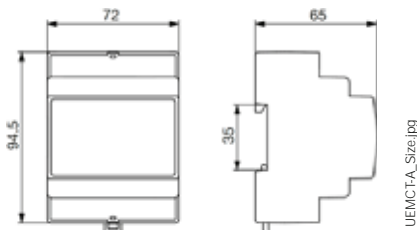


1. Backlit LCD display
2. Metrological LED
3. Buttons

Electrical characteristics

Current measurement (TRMS)	
Type	Three-phase - indirect via Rogowski loop
Input (RMS value) for Rogowski loop	100 mV / kA @ 50 Hz
Rogowski primary full scale	0.5 / 1 / 5 kA
The following settings change depending on the primary full scale configured (A)	
	500 1000 5000
Startup current (Ist)	0.8 1.6 8
Minimum current (Imin)	4 8 40
Transition current (Itr)	20 40 200
Reference current (Iref)	400 800 4000
Maximum current (Imax)	500 1000 5000
Voltage measurements (TRMS)	
Overvoltage category	300V CAT III - UC1 in accordance with IEC 61010-1
AC voltage (Un)	400 V, Overvoltage category III
Voltage range	320 - 480 VAC
Frequency	45-55Hz (MID), 45-65Hz (IEC)

Dimensions (mm)

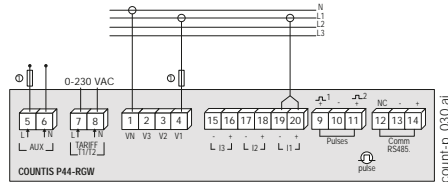


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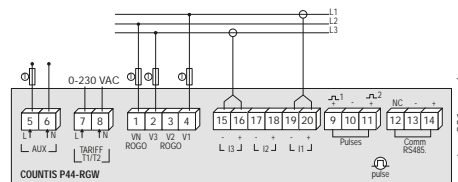
Transient overvoltage withstand	4 kV 1 minute, 6kV 1.2 μs
Measurement accuracy	
U, V / I / F / P, Q, S / PF	0.5% / 1% / 0.2% / 1% / 1% in accordance with IEC61557-12
Active energy	Class C in accordance with EN 50470-1/3 Class 0.5s in accordance with IEC 62053-21
Reactive energy	Class 2 in accordance with IEC 62053-23
Tariff management	2 tariffs, via 0-230V V digital input 4 tariffs, via communication
Power supply	
Auxiliary power supply	85-276 VAC or 120-240 VDC
Max. consumption	3 VA
Pulse output	
Number	2
Type of optocoupler	5-27 VDC - 27 mA max.
Pulse duration	60 / 100 / 200 ms
Pulse output 1	Configurable: 0.001 / 0.01 / 0.1 / 1 / 10 / 100 kWh per pulse
Pulse output 2	fixed at 0.3125 Wh/pulse (not affected by CT ratio)
Environment	
Operating temperature	-40 to +70°C
Ambient storage temperature	-40 to +75°C
Relative humidity	0 to 95%, condensation-free
Communication	
P44-RGW	
Link	RS485
Type	2-wire half duplex
Protocol	Modbus RTU
Speed	2.4 / 4.8 / 9.6 / 19.2 / 38.4 kbps

Connections

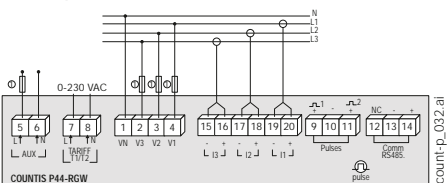
Single-phase, 2-wire with 1 CT (1P+N)



Three-phase, 3-wires with 2 CTs (3P)



Three-phase, 4-wires with 3 CTs (3P+N)



N - L: network input.
N' - L': network output.

1. 1 A gG / 1 A class CC fuses.

References

COUNTIS P44-RGW

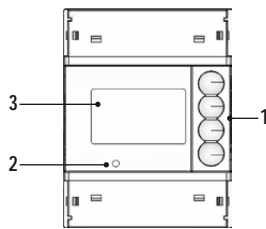
P44-RGW ⁽¹⁾ Indirect three-phase via Rogowski coils – 2 pulse outputs + MODBUS RS485 communication + MID

4850 5144

1. Available soon. Contact us for more information.

COUNTIS P4x-xQCT

Front panel



1. Backlit LCD display
2. Metrological LED
3. Buttons

Electrical characteristics

Current measurement (TRMS)				
Type	Three-phase via 3 x 100 mV phases three-phase block			
The following settings change depending on the primary full scale configured (A)				
	QCT-C-25	QCT-C-35	QCT-C-45	QCT-C-55
Startup current (Ist)	0.64	1	2.52	4
Base current (Ib)	160	250	630	1000
Minimum current (Imin)	3.2	5	12.6	20
Maximum Current (Imax)	192	300	630	1000

Voltage measurements (TRMS)

Overvoltage category	300V CAT III - UC1 in accordance with IEC 61010-1
AC voltage (Un)	400 V, Overvoltage category III
Voltage range	320 - 480 VAC
Frequency	45-55Hz (MID), 45-65Hz (IEC)
Transient overvoltage withstand	4 kV 1 minute, 6kV 1.2 μs

Measurement accuracy

U, V / I / F / P, Q, S / PF	0.5% / 1% / 0.2% / 1% / 1% in accordance with IEC61557-12
Active energy	Class B in accordance with EN 50470-1/3 Class 1 in accordance with IEC 62053-21
Reactive energy	Class 2 in accordance with IEC 62053-23

Power supply

Auxiliary power supply	85-276 VAC or 120-240 VDC
Max. consumption	3 VA

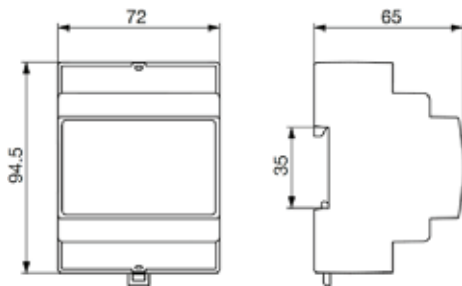
Environment

Operating temperature	-40 to +70°C
Ambient storage temperature	-40 to +75°C
Relative humidity	0 to 95%, condensation-free

Communication

P44-2QCT -4QCT	
Link	RS485
Type	2-wire half duplex
Protocol	Modbus RTU
Speed	2.4 / 4.8 / 9.6 / 19.2 / 38.4 kbps

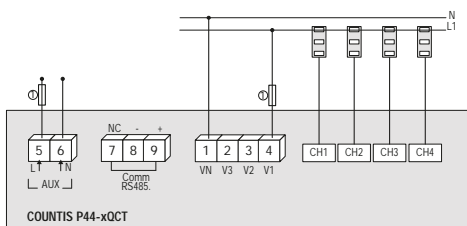
Dimensions (mm)



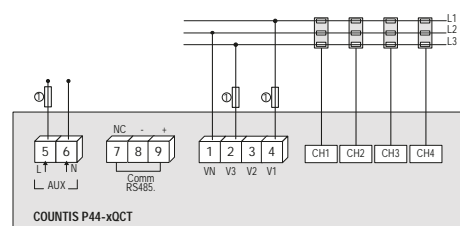
Type	modular
Number of modules	4
Front degree of protection	IP 51
Case degree of protection	IP20
Dimensions W x H x D	71.7 x 122.5 x 66 mm
Display type	Backlit LCD display
Connection cross-section and torque for measuring terminals (A & V)	0.5...2.5 mm ² / 0.2 Nm
Connection cross-section and torque for terminals S0, COM, tariff input	0.5...2.5 mm ² / 0.2 Nm

Connections

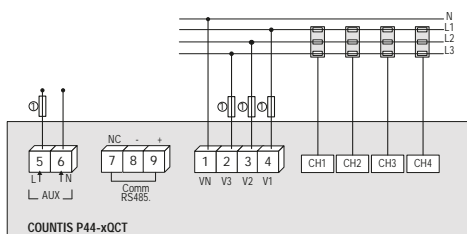
Single-phase, 2-wire with 1 CT (1P+N)



Three-phase, 3-wires with 2 CTs (3P)



Three-phase, 4-wires with 3 CTs (3P+N)



N - L: network input.
N' - L': network output.
1. 1 A gG / 1 A class CC fuses.

References

COUNTIS P44-xQCT		
P44-2QCT ⁽¹⁾	Indirect three-phase via 3P CT block (max 2 per meter) – MODBUS RS485 communication+ MID	4850 5244
P44-4QCT ⁽¹⁾	Indirect three-phase via 3P CT block (max 4 per meter) – MODBUS RS485 communication+ MID	4850 5444

1. Available soon. Contact us for more information.