



547223D

# COUNTIS E47/E48

THREE-PHASE DIGITAL ENERGY METERS  
MEASURE VIA CT UP TO 12000-A ETHERNET



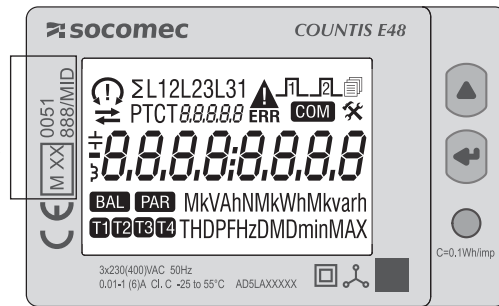
COUNTIS E47 : ref. 4850 3056  
COUNTIS E48 (MID) : ref. 4850 3057



Certificate of conformity with MID Directive.  
User Manual:  
<https://www.socomec.com/documentation>

www.socomec.com

MID  
Device  
code and  
certification  
data  
indications



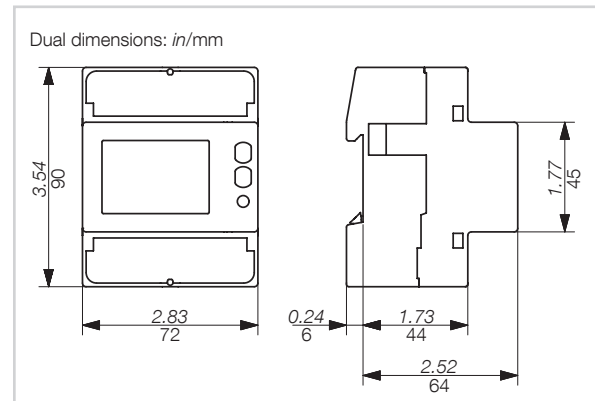
## Measurements

The parameters are available according to the device model.

INSTANTANEOUS VALUES	Symbol	Measure unit	Display	Com
Phase to Neutral voltages	$\sum V$	V	•	•
	V1, V2, V3		•	•
	$\sum U$		•	•
Phase to Phase voltages	U12, U23, U31		•	•
	$\sum I$	A	•	•
I1, I2, I3, IN	•		•	
$\sum PF$	•		•	
Power factor	PF1, PF2, PF3		•	•
	$\sum S, S1, S2, S3$	kVA	•	•
Active power	$\sum P, P1, P2, P3$	kW	•	•
Reactive power	$\sum Q, Q1, Q2, Q3$	kvar	•	•
Frequency	f	Hz	•	•
Phase sequence	CW / CCW		•	•
Power direction	$\rightleftharpoons$		•	
RECORDED DATA	Symbol	Measure unit	Display	Com
Total energy counters	Ea, Er ( $\sum$ & per phase)	kWh, kvarh	•	•
	Eap ( $\sum$ )	kVAh	•	•
Total apparent energy	Eap (per phase)		•	•
	Er ( $\sum$ )	kvarh	•	•
T1/T2/T3/T4 tariff energy counters	Ea, Er ( $\sum$ )	kWh, kvarh	•	•
	Ea, Er, Eap ( $\sum$ & per phase)	kWh, kvarh, kVAh	•	•
T1/T2/T3/T4 tariff ind. and cap. reactive energy	Er ( $\sum$ )	kvarh	•	•
	Er (per phase)		•	•
T1/T2/T3/T4 tariff resettable partial energy counters	Ea ( $\sum$ )	kWh	•	•
Resettable partial energy counters	Ea, Er, Eap ( $\sum$ )	kWh, kvarh, kVAh	•	•
Energy balance	$\sum$	kWh, kvarh	•	•
OTHER INFORMATION	Symbol	Value/status	Display	Com
Present tariff	T	1/2/3/4		•
Partial counters	PAR	START/ STOP	•	
S0 output status	$\square$	Active/Not active	•	

## Energy balance values calculation

ENERGY BALANCE	Formula
kWh	(+kWh T1) - (-kWh T1) + (+kWh T2) - (-kWh T2)
kvarh	(+kvarh T1) - (-kvarh T1) + (+kvarh T2) - (-kvarh T2)



## Technical characteristics

Data in compliance with EN 50470-1, EN 50470-3

GENERAL	
Housing	4 modules DIN 43880
Mounting	DIN rail EN 60715
OPERATING FEATURES	
Connectivity	4 wires MID model: 3x 230/400 V Non MID model: 3x 230/400 V to 3x 240/415 V
Storage of energy values and configuration	FRAM
Display tariffs identifier	T1, T2, T3 and T4
SUPPLY	
Autosupplied	
Operating voltage range	184 ... 288 VAC
Operating frequency range	45 ... 65 Hz
Rated power dissipation (max.) Pv	3.5VA - 1W
CT burden (for each phase)	0,04 VA
OVERLOAD CAPABILITY	
Voltage Un continuous	288 VAC
Voltage Un momentary (1 s)	300 VAC
Current Imax continuous / momentary	6 A / 20 Imax for 0.5 s
DISPLAY (ACCORDING TO THE SET CT PRIMARY)	
Display type	LCD 8 digits with backlight
Active energy: 1 display, 8-digit	00000.000 kWh ... 999999.99 MWh
Reactive energy: 1 display, 8-digit	00000.000 kvarh ... 999999.99 Mvarh
Apparent energy: 1 display, 8-digit	00000.000 kVAh ... 999999.99 MVAh
Instantaneous active power: 1 display, 4-digit	0.000 kW ... 99.99 MW
Instantaneous reactive power: 1 display, 4-digit	0.000 kvar ... 99.99 Mvar
Instantaneous apparent power: 1 display, 4-digit	0.000 kVA ... 99.99 MVA
Instantaneous voltage: 1 display, 4-digit	000.0 ... 999.9 V
Instantaneous current: 1 display, 4-digit	0.000 ... 99.99 kA
Power Factor: 1 display, 4-digit	0.000 ... 1.000
Frequency: 1 display, 4-digit	45.00 ... 65.00 Hz
Display period refresh	1 s
MEASURING ACCURACY	
Active energy	class C acc. to EN 50470-3
Active energy	class 1 acc. to EN 62053-21
Reactive energy	class 2 acc. to EN 62053-23
MEASURING INPUT	
Type of connection	via current transformer
Certified voltage Un	MID model: 3x 230/400 V Non MID model: 3x 230/400 V to 3x 240/415 V
Current Iref / Imin	1 A / 0.10 A
Operating range current (Ist ... Imax)	0.002 ... 6 A (Class 1) 0.001 ... 6 A (Class C)
Certified frequency fn	MID model: 50 Hz $\pm$ 1 Hz Non MID model: 50/60 Hz $\pm$ 1 Hz
Starting current for energy measurement (Ist)	2 mA Class 1 1 mA Class C

CURRENT TRANSFORMER AND FSA	
Minimum CT primary	1 or 5
Maximum CT primary	12000
CT Secondary	1 or 5 A
OPTICAL INTERFACES (LED)	
Meter constant	0.1 Wh/imp
S0 OUTPUT	
Type	Optoisolated - 5 to 27VDC 27mA acc. to EN 62053-31
Pulse weight according to the set CT ratio	1 Wh -> CT = 1 ... 4 5 Wh -> CT = 5 ... 24 25 Wh -> CT = 25 ... 124 125 Wh -> CT = 125 ... 624 1000 Wh -> CT = 625 ... 3124 10000 Wh -> CT = 3125 ... 12000
SAFETY	
Indoor meter	yes
Degree of pollution	2
Operational voltage	300 VAC
AC voltage test (EN 50470-3, 7.2)	4 kV
Impulse voltage test	6 kV 1.2/50µs
Protection class (EN 50470)	class II
Housing material flame resistance	UL 94 class V0
EMBEDDED COMMUNICATION	
Ethernet Modbus TCP	10/100 Mbps
Webserver login	Username: admin/Password: Admin
Default IP address	192.168.0.4
Default Gateway IP address	192.168.0.1
Default Netmask	255.255.255.000
Isolation class	SELV Circuit
ENVIRONMENTAL CONDITIONS	
Mechanical environment	M1
Electromagnetic environment	E2
Operating temperature	-25 ... +55 °C
Limit temperature of transportation and storage	-25 ... +75 °C
Relative humidity (not condensation)	$\leq$ 80 %
Vibrations	$\pm$ 0.075 mm
Degree protection	IP51(*)/IP20

(\*) For the installation in a cabinet at least with IP51 protection.

