

# ENERGY ANALYZER

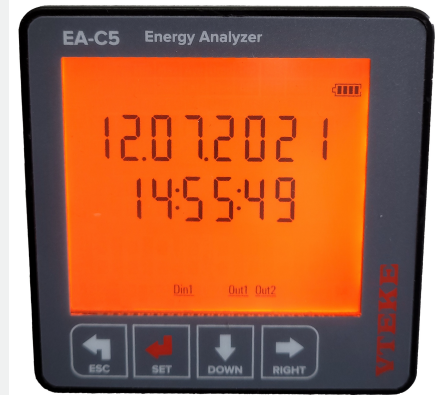
# EA-C5

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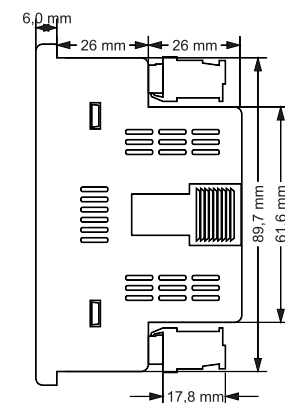
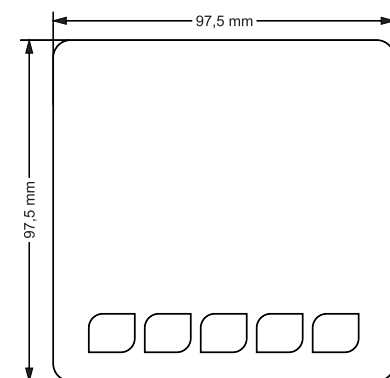
## FEATURES

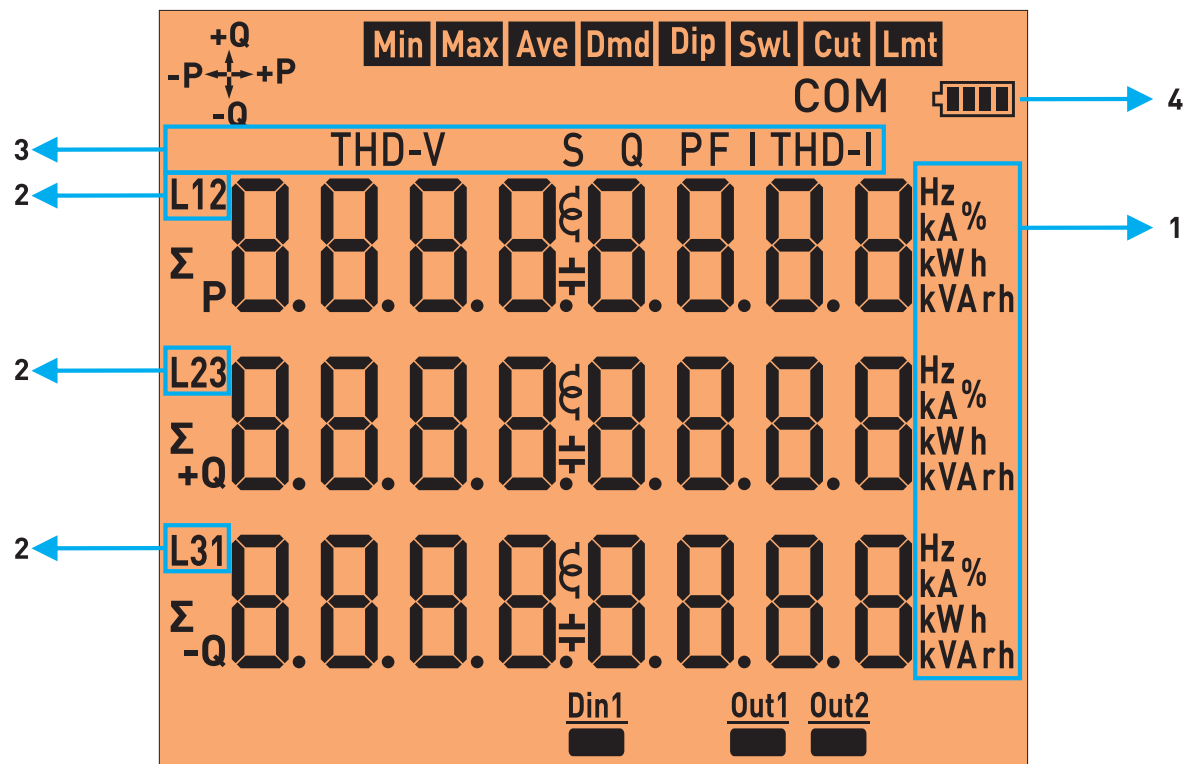
PARAMETER	VALUE
Total Harmonics Distortion	THD-V, THD-I
Voltage Harmonics	Up to 55st harmonics (L-N and L-L)
Current Harmonics	Up to 55st harmonics
Active Power	P1, P2, P3, ΣP
Reactive Power	Q1, Q2, Q3, ΣQ
Q	S1, S2, S3, ΣS
Power Factor	True PF, cos φ (of each phase)
Voltage	phase-to-phase, phase-to-neutral (min, max & average values are saved)
Current	I1, I2, I3, ΣI (min, max & demand are saved)
Frequency	F1, F2, F3 (min, max & average)
Energy	ΣkWh (import & export) ΣkVARh (inductive & Capacitive)
Relay Output	2 Relay outputs (adjustable), 1 digital input
Irregularities	voltage and current imbalances
Screen	71.5 X 61.5 Custom Design Glass LCD
Communication	RS485 Modbus RTU
Event logs	High voltage, low voltage, power interruption, Voltage and current imbalances, high current, THD-V & THD-I limits
Real time Clock	Date and time can be set
Memory	You can delete energy values, demands records and event logs.
Password	Menu is password protected



## TECHNICAL SPECIFICATIONS

PARAMETER	VALUE
Operating Voltage	85V - 240 AC
Operating Frequency	50 / 60 Hz
Operating Power	<10VA
Operating Temperature	-20°C.....55°C
Input Voltage (L-N)	1V - 330VAC
Voltage Measuring Range	1V - 600kV
Input Current	1mA - 5,5A
Current Measuring Range	1mA - 50.000A
Voltage, Current, Accuracy	%±0.2
Active Energy Accuracy	%±0.5
Reactive Energy Accuracy	%±1
Supported Connection	3P4W
Current Transformer Ratio	1....5000
Voltage Transformer Ratio	1,0....9999
Harmonic Voltage	3 - 55
Harmonic Current	3 - 55
Real Time Clock	> 5 Year
Contact Output	2A / 250V AC [Resistive Load]
Digital Input	9V - 24V DC
Protection Class	IP41[Front Panel], IP20[Body]
Panel Hole Measurement	91mm x 91mm
Cable Diameter	1.5mm <sup>2</sup>





- 1 - Indicates the unit of the value.
- 2 - Indicates which phase the value belongs to .
- 3 - Indicates displayed values. V- voltage, I-current, F-frequency, S-apparent power, P- active power, PF- power factor, THD-I- total current harmonics, THD-V- total voltage harmonics, Q-reactive power.
- 4 - Indicates battery level of clock time.

→ +P Specified that the indicated active energies are imported.

-P← Specified that the indicated active energies are exported.

+Q ↑ Specified that the indicated reactive energies are inductive.

↓ -Q Specified that the indicated reactive energies are capacitive.

⊖ Specified that the indicated reactive energies are inductive.

⊕ Specified that the indicated reactive power are capacitive.

COM Indicates that communication is done.

**Min** Indicates that the values shown are minimum.

**Max** Indicates that the values shown are maximum.

**Ave** Indicates that the values shown are average.

**Dmd** Indicates that the values shown are demand.

**Dip** Indicates that the values shown are below 10%.

**Swl** Indicates that the values shown are over 10%.

**Cut** Indicates that the values shown are below 40%.

**Lmt** Indicates that the values shown are over 80% in current and over 20% in harmonics.

**Din1** Din1: There is voltage(1)

**Din1** Din1: There is no voltage(0)

**Out1** Out1: Relay 1 is pulled (short circuit)

**Out1** Out1: Relay 1 is released (open circuit)

**Out2** Out2: Relay 2 is pulled (short circuit)

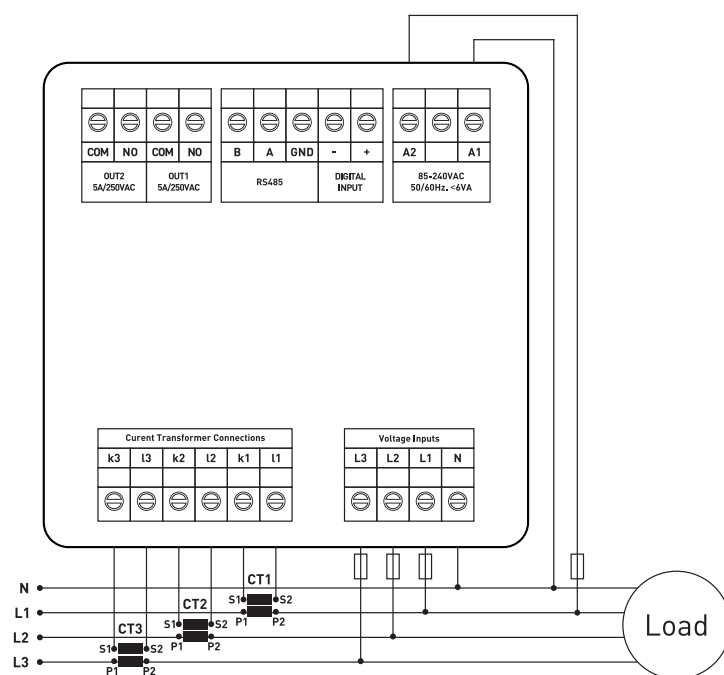
**Out2** Out2: Relay 2 is released (open circuit)

**Σ P** Total active energy

**Σ +Q** Total inductive reactive energy

**Σ -Q** Total capacitive reactive energy

CONNECTION DIAGRAM



VALUES TABLE

Parameter Number	Parameter	Unit	Factory Value	Minimum Value	Maximum Value
Ctr	Current Transformer Ratio	-	1	1	5000
Vtr	Voltage Transformer Ratio	-	1.0	0.1	999.9
br	Baudrate	bps	9600	1200	115200
-	Stop bits	-	1	-	-
-	Data bits	-	8	-	-
-	Parity	-	none	-	-
Id	ModBus ID	-	1	1	247
En	Deleting Total Energy	-	No	Yes	No
dE	Deleting Demand Values	-	No	Yes	No
LO	Deleting Event Records	-	No	Yes	No
PASS	Password	-	0	0	9999
Con Type	Connection Type	-	3P4L	3P4L	3P3L
Date Set	Date	-	-	2000	2100
Time Set	Hour	-	-	-	-
Par	Parametre	-	OFF	OFF, Uln, Iln, Ilt, thdU, thdI, PF, U Un, I Un, dl n	
Fun	Function	-	High	High	Low
UAL	Uln (voltage)	Volt	vtr x 10	vtr x 10	vtr x 500
	Iln (Current)	Amper	(ctrx10)/100	(ctrx10)/100	(ctrx500)/100
	Ilt (Total Current)	Amper	(ctrx3x10)/100	(ctrx3x10)/100	(ctrx3x500)/100
	thdU (Total Voltage Har.)	%	1	1	50
	thdI (Total Current Har.)	%	1	1	50
	PF (Power Factor)	%	0.50	0.50	0.99
	U Un (Voltage imbalance)	%	1	1	50
	I Un (Current Imbalance)	%	1	1	50
Dip	Low Voltage	%	<math>\lt; Vtr \times 230 \times 0,90</math> ve <math>\lt; Vtr \times 400 \times 0,90</math>		
Swl	High voltage	%	>math>\gt; Vtr \times 230 \times 1,10</math> ve >math>\gt; Vtr \times 400 \times 1,10</math>		
Cut	No Voltage	%	<math>\lt; Vtr \times 230 \times 0,40</math> ve <math>\lt; Vtr \times 400 \times 0,40</math>		
Lmt I	Current Limit	%	>Ctr x 0.80		
Lmt Thd-V	Thd-V Limit	%	>1.20		
Lmt Thd-I	Thd-I Limit	%	>1.20		
Lmt PF	Power Factor Limit	%	<0.80		
dl n	Data Input Frequency	Hz.	>1Hz.		