ENERGY ANALYZER

EA-C1

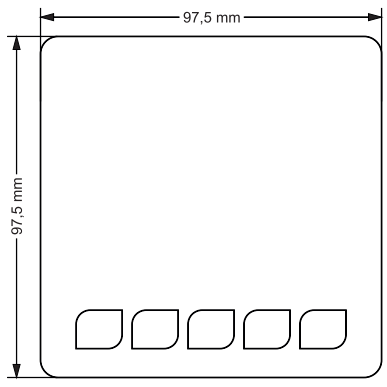
VTEKE®
www.vteke.com.tr

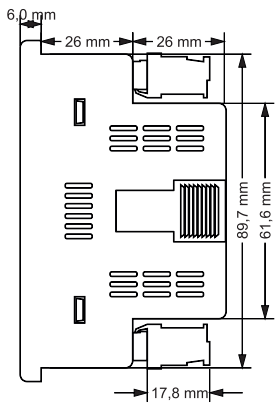
FEATURES

PARAMETER	VALUE
Total Harmonics Distorition	THD-V, THD-I
Voltage Harmonics	Up to 31st harmonics (L-N and L-L]
Current Harmonics	Up to 31st harmonics
Active Power	P1, P2, P3
Reactive Power	Q1, Q2, Q3
Q	S1, S2, S3
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	∑kWh (import & export) ∑kVARh (inductive & Capacitive)
Relay Output	Adjustable
Irregularties	Voltage and current İmplances
Communication	RS485 Modbus RTU
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)	5V - 330VAC
Voltage Measuring Range	5V - 330kV
Input Current	10mA - 5,5A
Current Measuring Range	10mA - 5500A
Voltage, Current, Accuracy	%±0.5
Active Energy Accuracy	%±1
Reactive Energy Accuracy	%±2
Supported Connection	3P4W
Current Transformer Ratio	1....1000
Voltage Transformer Ratio	1,0....9999
Harmonic Voltage	3 – 31
Harmonic Current	3 – 31
Digital Input	9V - 24V DC
Weight	<300Gr
Protection Class	IP41[Front Panel], IP20[Body]
Panel Hole Measurement	91mm x 91mm
Connection Type	Plug-in Terminal Connection
Cable Diameter	1.5mm²
Mounting	Assembly to panel front cover
Working Altitude	<2000 meter





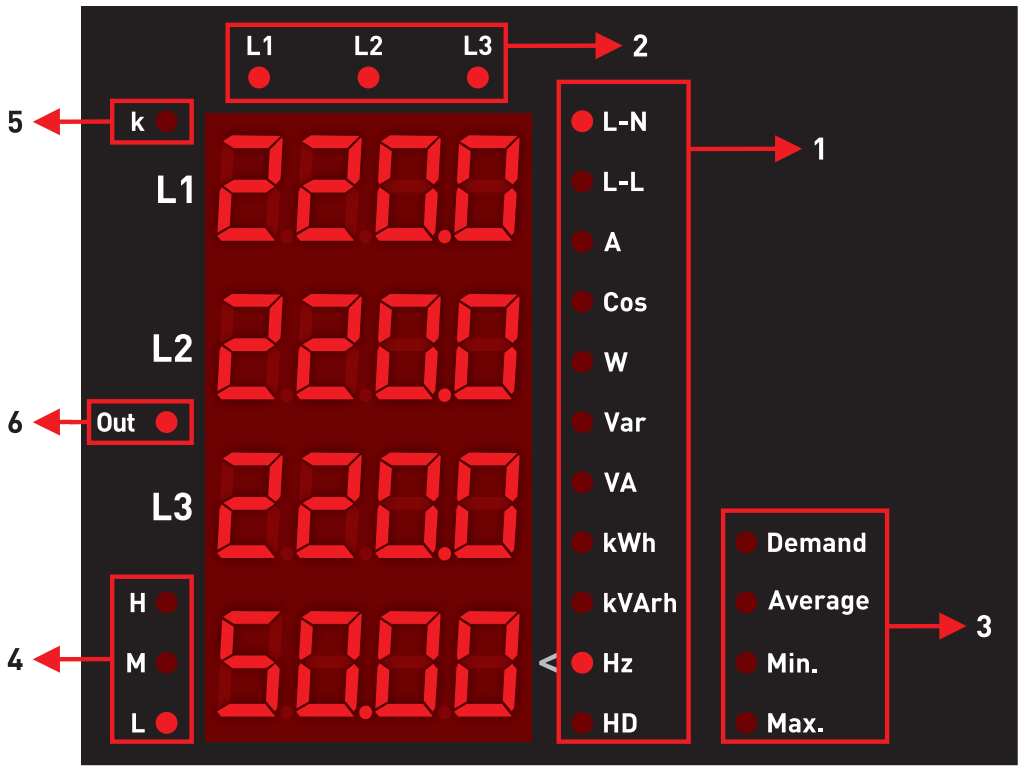


Figure-2

1 - Shows the unit of the value.

L-N: Phase-Neutral Voltage,
L-L: Phase-Phase Voltage,
A: Current,
Cos: Cosinus Fi and Power Factor,
W: Watt (Active Power),
(If it is shown with "-", it is Export Active Power.),
Var: Reactive Power,
(If it is shown with "-", it is Capacitive Power.),
VA: Apparent Power,
kWh: Active Energy,
kVArh: Reactive Energy,
(If it is shown with "-", it is Capacitive Energy.),
Hz: Frequency,
HD: Harmonics.

2 - Shows which phase the value belongs to. (L1, L2, L3)

3 - Specifies the type of value shown. Minimum, maximum, average and demand.

Min.: Indicates that the values shown are minimum. (Period: 2 seconds.)
Max.: Indicates that the values shown are maximum. (Period: 2 seconds.)
Average: Indicates that the values shown are average. (Period: 5 minutes.)
Demand: Indicates that the values shown are demand. (Period: 15 minutes.)

4 - It shows the magnitude of the current value drawn from the system.

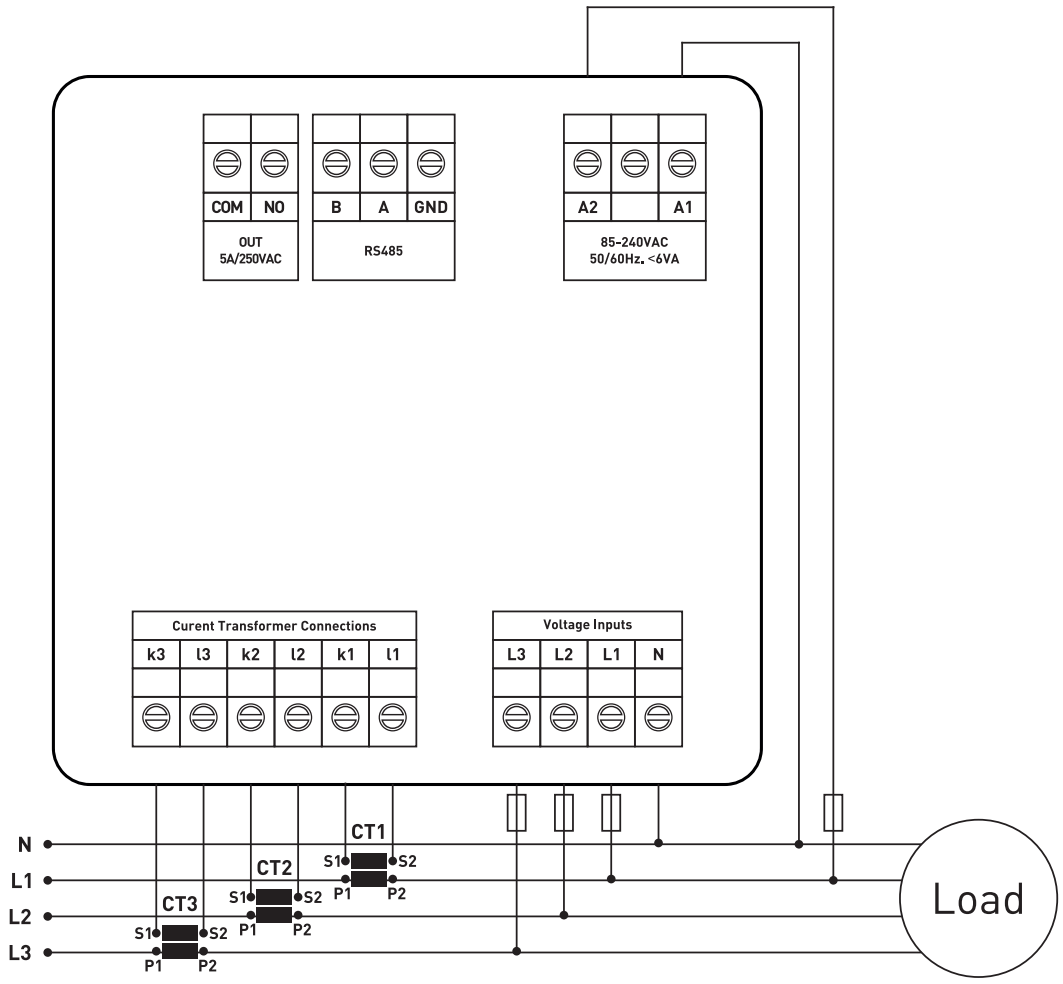
L: This LED will light if the current value in any phase is 1A or less.
M: This LED will light if the current value in any phase is between 1A and 4A.
H: This LED will light if the current value in any phase is 4A or above.

5 - When the value shown on the screen is greater than 9999, the “k” led lights on.
Ex.: When the voltage value in the system is 34500V, the value to be read on the screen will be 34.50.

6 - Shows the status of the relay.
Ex.: If the Out led is on, the Out contact is active (energised), if the led is off, it is passive (de-energised).

Ex.: In the above screen (Figure-2), the phase-neutral voltage values and Hz (frequency) value of L1, L2 and L3 are shown. The current drawn from the system is between 0A and 1A and Out1 contact is active.

CONNECTION DIAGRAM



VALUES TABLE

Parameter Number	Parameter	Unit	Factory Value	Minimum Value	Maximum Value
Ctr	Current Transformer Ratio	-	1	1	1000
Vtr	Voltage Transformer Ratio	-	1.0	0.1	999.9
br	Baudrate	bps	9600	1200	38400
-	Stop bits	-	1	1	2
-	Data bits	-	8	-	-
-	Parity	-	none	none, even, odd	
Id	ModBus ID	-	1	1	247
En	Deleting Total Energy	-	No	Yes	No
dE	Deleting Demand Values	-	No	Yes	No
PASS	Password	-	0	0	9999
Par	Parameter	-	OFF	OFF, Uln, Iln, Ilt, thdU, thdI, PF, U Un, I Un, dI n	
Fun	Function	-	High	Low	High
UAL	Uln (Voltage)	Volt	vtr x 10	vtr x 10	vtr x 500
	Iln (Current)	Ampere	(ctrx10)/100	(ctrx10)/100	(ctrx500)/100
	Ilt (Total Current)	Ampere	(ctrx3x10)/100	(ctrx3x10)/100	(ctrx3x500)/100
	thdU (Total Voltage Harmonic)	%	1	1	50
	thdI (Total Current Harmonic)	%	1	1	50
	PF (Power Factor)	%	0.50	0.50	0.99
	U Un (Voltage Unbalance)	%	1	1	50
	I Un (Current Unbalance)	%	1	1	50
dLY	Delay Time	second	0	1	1000
HyS	Hysteresis Value	%	0	1	10