

# K21

## MULTIFUNCTIONAL POWER MONITOR



INSTRUCTION MANUAL  
V.01 12-07

## 1- PRECAUTIONS OF INSTALLATION AND USE.



¡NOT FOLLOWING THIS INSTRUCTIONS  
MAY CAUSE INJURES OR DEATH!

- Disconnect the power before starting to work on the equipment.
- When the instrument is connected to power supply do not remove the front panel.
- Do not clean the instrument with solvents. Use only dry cloth.
- Check the correct terminals in the cabling.
- The service of the instrument should only be performed by the supplier.
- The manufacturer and its subsidiaries do not assume responsibility for the consequences from the use of this equipment.
- The assembly should be only in panel.

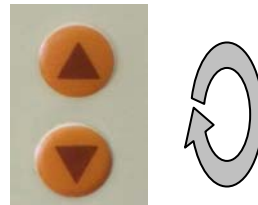
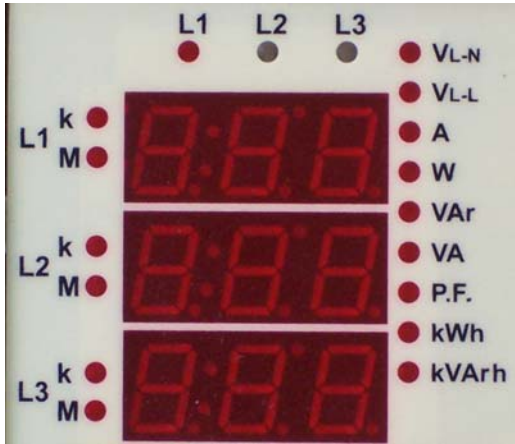


**2- INSTRUCTIONS ON USE.**

The multifunctional power monitor K21 lets you monitor the electrical parameters of the network and view them in 5 displays.

The parameters that can be displayed are:

- **Phase values.**



Push the button to access to the desired parameter.

- **Totals values of Active Power (imported and exported), Aparent Power and Frequency.**



Push the button to access to the desired parameter.

- **Totals values of Reactive Power (imported and exported) and cos φ (for imported and exported power).**



Push the button to access to the desired parameter.

- **Energy counters.**

The instrument provides 4 meters, kWh (Imp. and Exp) and kVArh (Imp. and Exp.). The last 4 displays are used simultaneously to constitute a piece of 12 (4x3) digits

- **Maximun, minimum and average values.**

Maximum value .....  
 Minimum value .....  
 Average value .....  
 Instantaneous value **WITHOUT ILLUMINATION**

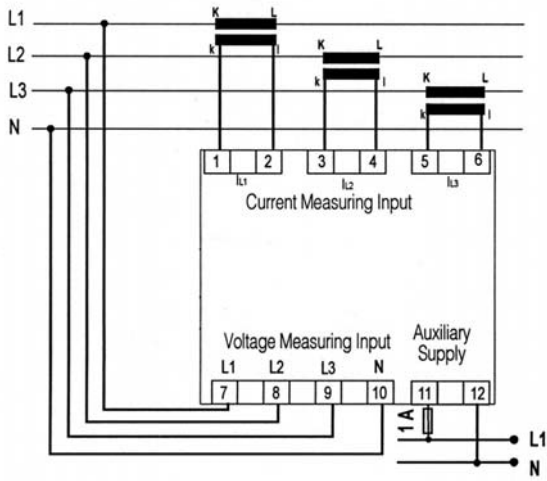


Push the button to access to the desired parameter.

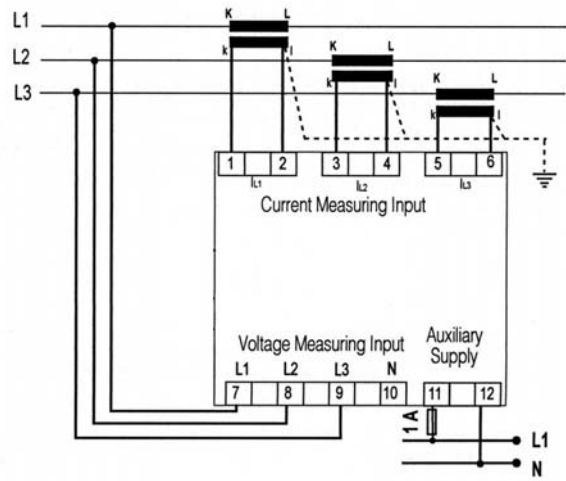
**NOTE:** The exported power is indicated with a blinking point so inverted polarity problems in the installation can be detected easily.

3- INSTALLATION.

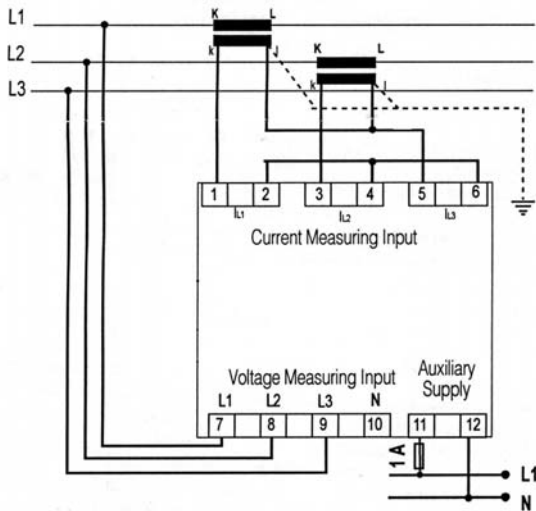
Schemes for the electrical installation



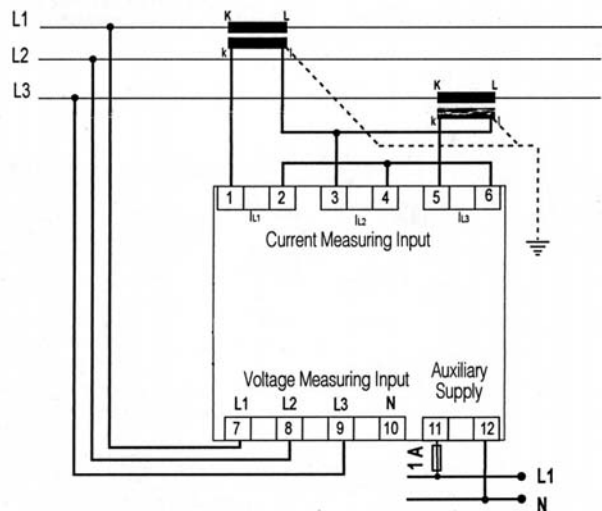
Three-phase four wires.



Three-phase three wires.



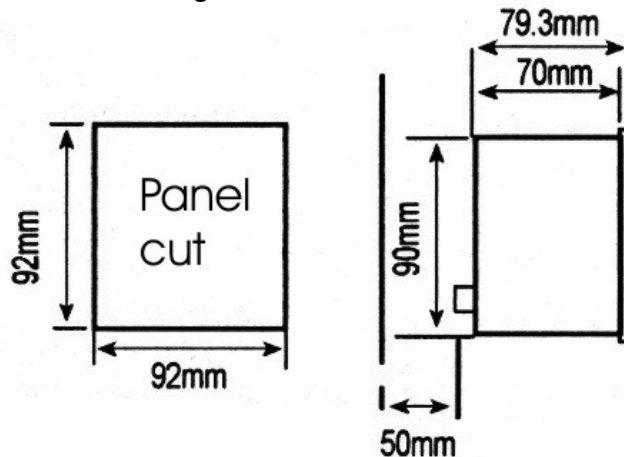
Three-phase three wires with connection Aron on phases 1 and 2.



Three-phase three wires with connection Aron on phases 1 and 3.

All these schemes are for balanced and not balanced system.

Measures for the panel mounting






#### 4- CONFIGURATION.

The parameters that can be configured are:


- Ratio current transformers.
- Ratio voltage transformers.
- Erasing maximum, minimum and counters.
- Activation and change the key to access (password)



#### Entry into the configuration menu.

Pressing the key  during 5 seg. the options are: TRAFO, DETI, RESET, PIN, we move using the keys  y  (see scheme of the configuration menu).

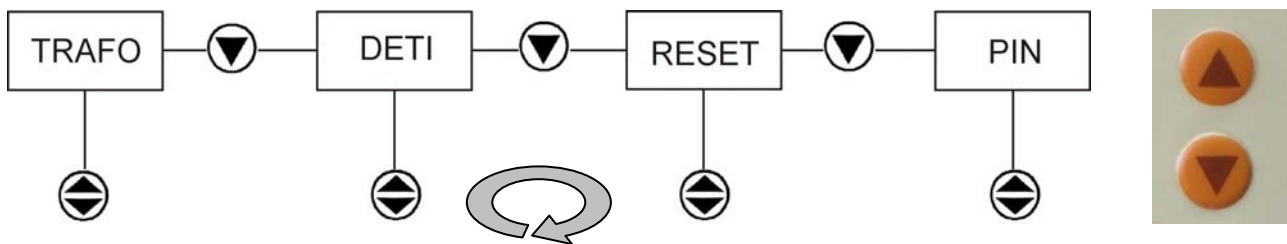
It falls to each function by pressing the key . With the keys  y  select the function and with the key  confirm.

#### Exit configuration menu.

Pressing the key  (ESC) until show "SAV, SET, YES".

- If we press  (ESC) or we choose "no", **not recording made** the new datas.
- If we press  **it is recorded** the new data.
- If no button is pushed in 30 seconds, the instrument exits configuration mode **without saving the changes**.

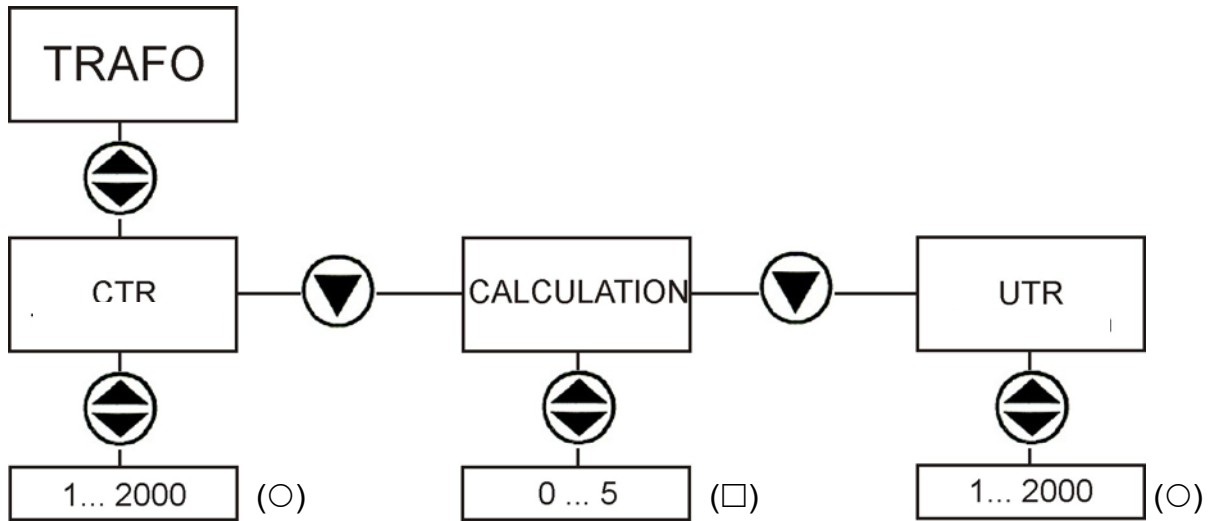
#### Escheme of the configuration menu.



Push the button to access to the desired parameter

- TRAFO: Introduction of the transformer ratio .
- DETI: Adjustment of the demand time.
- RESET: Reset of maximum, minimum and demand values.
- PIN: Acces Key to prevent manipulations unwanted

**TRAFO:** Introduction of the ratios of the transformers.



(○) You must enter the ratio and not the primary and secondary transformer value.

Example : Trasformer of 200/5 A                      ratio to introduce 40  
 Traformer of 34500/100 V → ratio to introduce 345.  
 If trafos are not used the ratio is 1

(□) Several calculation methods for reactive power, for internal adjustments. Default value is "1".

0 -Vectorial sumation of 3 phase, 90° rotation of voltage vector and multiply with current.

1 -Each phase separately, 90° rotation of voltage vector and multiply with current.

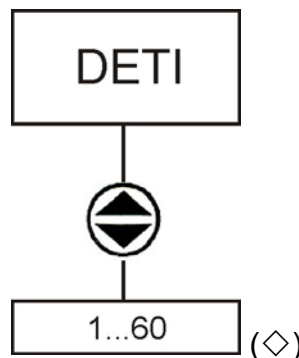
2 -Vectorial summation of 3 phase,  $\sum V_n I_n \sin(\varphi_n)$

3 -Each phase separately,  $\sum V_n I_n \sin(\varphi_n)$

4 -Vectorial summation of 3 phase,  $\sqrt{s^2 - p^2}$

5 -Each phase separately,  $\sqrt{s^2 - p^2}$

**DETI:** Adjustment of the integration time.

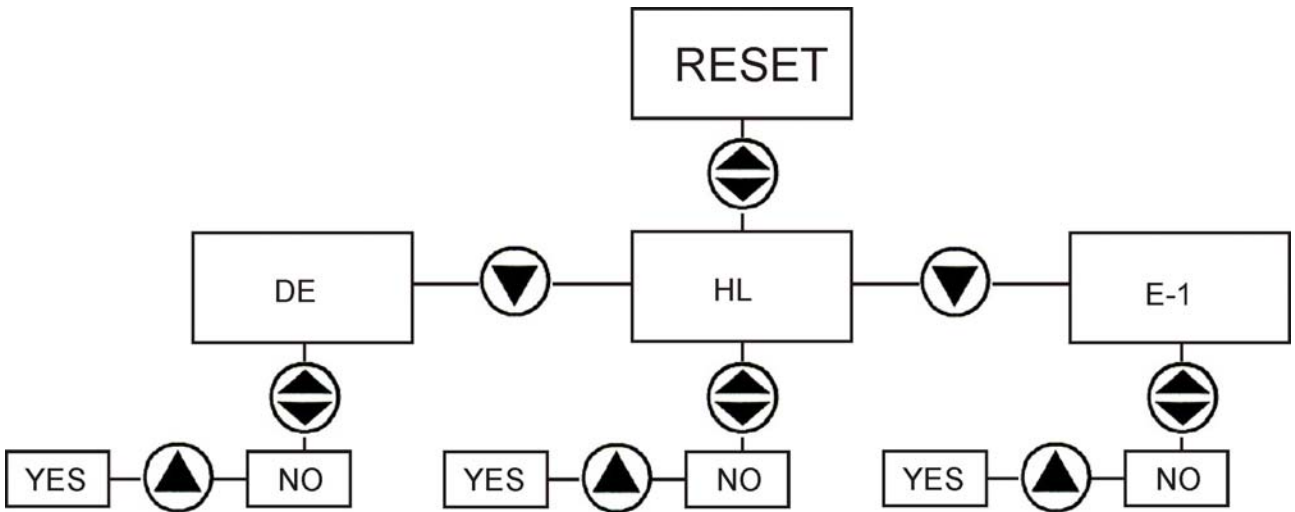


(◇) Integration time, in seconds, for the calculation of the demand values.

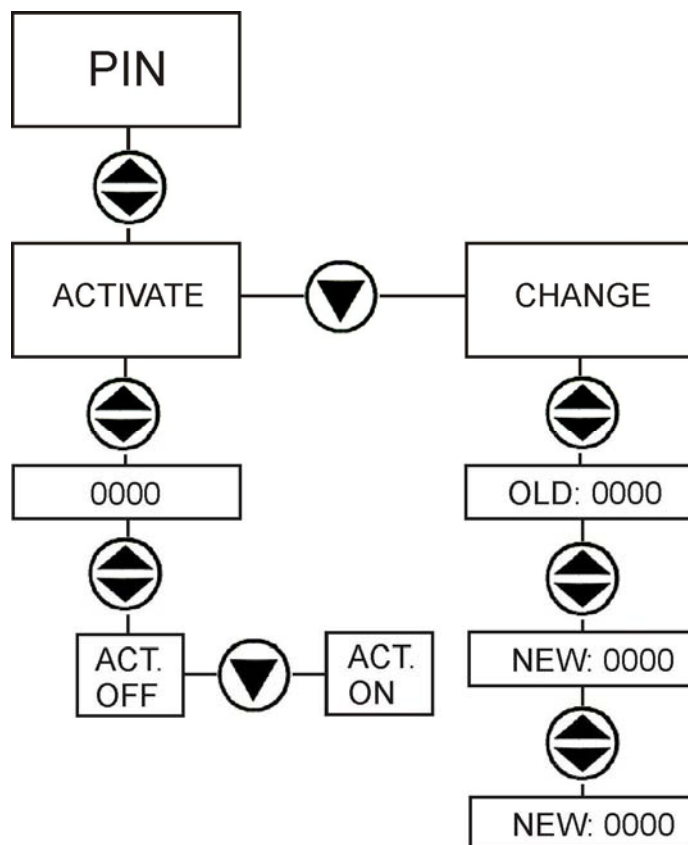
**K21 MULTIFUNCTIONAL POWER MONITOR**

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**RESET:** Reset of maximum and minimum values (HL). Demand values (DE) and counters (E-1)



**PIN:** To enable and change the password.



**6- TECHNICAL DATA**

4 quadrant measuring	True RMS
Input voltage	10...300 V AC, 50-60 Hz (L-N) 10...500 V AC, 50-60 Hz (L-L)
Input current	0,05 ... 5,5 A
Aux. Power supply	190-260 V AC, 50-60 Hz
Aux. Power supply power consumption	< 4 VA
Measuring input power consumption	< 1 VA
Class	1 $\pm$ 1 digit
Voltage Transformer Ratio	1 ... 2000
Current Transformer Ratio	1 ... 2000
Operating temperature	-5 °C ... +50 °C
Display	Red LED
Electric Protection	Double insulation – Class II
Box Protection	IP40, frontal panel
Box Material	Non flammable
Installation	Panel mounted
Installation Category	Class III
Wire Thickness (terminal block)	2,5 mm <sup>2</sup>
Dimensions	96 x 96 x 80 mm
Weight	0,45 kg

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GARANTIZAMOS EL SERVICIO DE ASISTENCIA TÉCNICA POST-VENTA

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