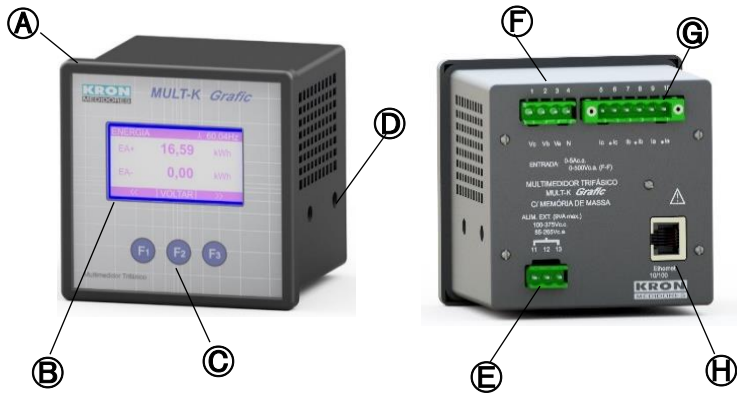


1 Knowing the Product

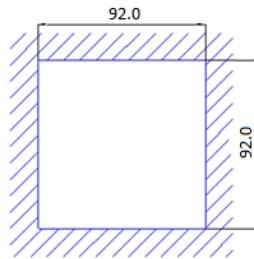


(A)	Mult-K Grafic	(E)	Power Supply Input
(B)	LCD Display	(F)	Voltage Input
(C)	Navigation keys	(G)	Current Input
(D)	Side locks	(H)	Ethernet Output*

*Communication Output. Not available for models with RS-485 output, being replaced by it in this case.

2 Installing the Product

Accomodate the meter on the panel cutout and fasten it using the side locks (D). Panel's cutout dimensions must be 92x92mm



3 Power Supply Connection

Power Supply signal must be applied to the (E) terminal block. Cabling must be connected in accordance to the power supply option present in the meter.

Selectable AC Voltage (220 or 120 Vac)	
Working Range: 80 to 120%	
220Vac	120Vac
Universal Power Supply	DC Power Supply
Working Range: 85 to 265 Vac / 100 to 375Vdc	Working Range 24, 48Vdc: 80 to 120% 12Vdc: 90 to 120%
<p>(Without Polarity)</p>	



ATTENTION

Pay extreme attention to the type of auxiliary power supply of your meter.

Incorrect cabling connection or applying a voltage signal above the specified limits can damage it severely.

4 Voltage Input Connections

Connect phases and neutral references to the **F** terminal block, using the order described below:

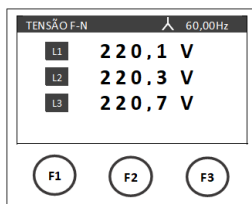
Terminal Description	Signal do be Connected
4 – N	Neutral
3 – Va	Phase 'R'
2 – Vb	Phase 'S'
1 – Vc	Phase 'T'
Measurement Range: 20 to 500Vac Ph-Ph 11,54 to 288,67 Vac Ph-N	

5 Current Input Connections

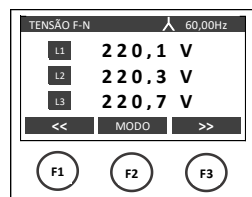
Connect phase references to the **G** terminal block, using the order described below:

Terminal Description	Signal to be Connected
10 – °Ia	CT's S1 - Phase 'R'
9 – Ia	CT's S2 - Phase 'R'
8 – °Ib	CT's S1 - Phase 'S'
7 – Ib	CT's S2 - Phase 'S'
6 – °Ic	CT's S1 - Phase 'T'
5 – Ic	CT's S2 - Phase 'T'
Measurement Range: 20mA to 5Aac (Continuous Overload: up to 7.5Aac)	

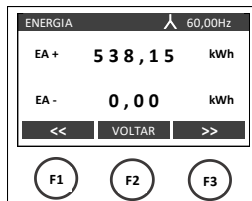
6 Accessing Operation Modes



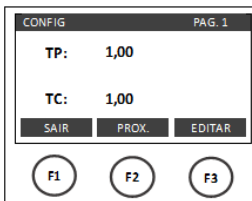
Mult-K Grafic's Man-Machine Interface is composed of an LCD display and three navigations keys - **F1**, **F2** and **F3**. The navigation keys can assume diverse functions, which are always presented in the lower navigation bar. To access the intended function/command, the user must press the related key. The lower navigation bar will fade after ten seconds of no interaction with the analyzer.



Instantaneous Measurements: Initial and main mode of the analyzer, which allows access to other modes and the checking of **V**, **A**, **W**, **VAR**, **VA**, **PF**, **Hz** and **THD** values. In this mode, use the **<<** and **>>** keys to navigate through the measurement parameters.



Energy Measurements: checking of **kWh+**, **kWh-**, **kVArh+** and **kVArh-** values. To access it, with the analyzer in the main mode, press any key. Then, press repeatedly the **MODO** key until the **ENERGIA** message appears on the right side. After that, press **ENERGIA** key.



Configurations: configuration of constants for PT and CT, connection diagrams, integration time (demand), communication, power quality parameters, and reset commands (energies, demands and voltage measurement campaigns). To access it, with the analyzer in the main mode, press any key.

7 Configurations mode

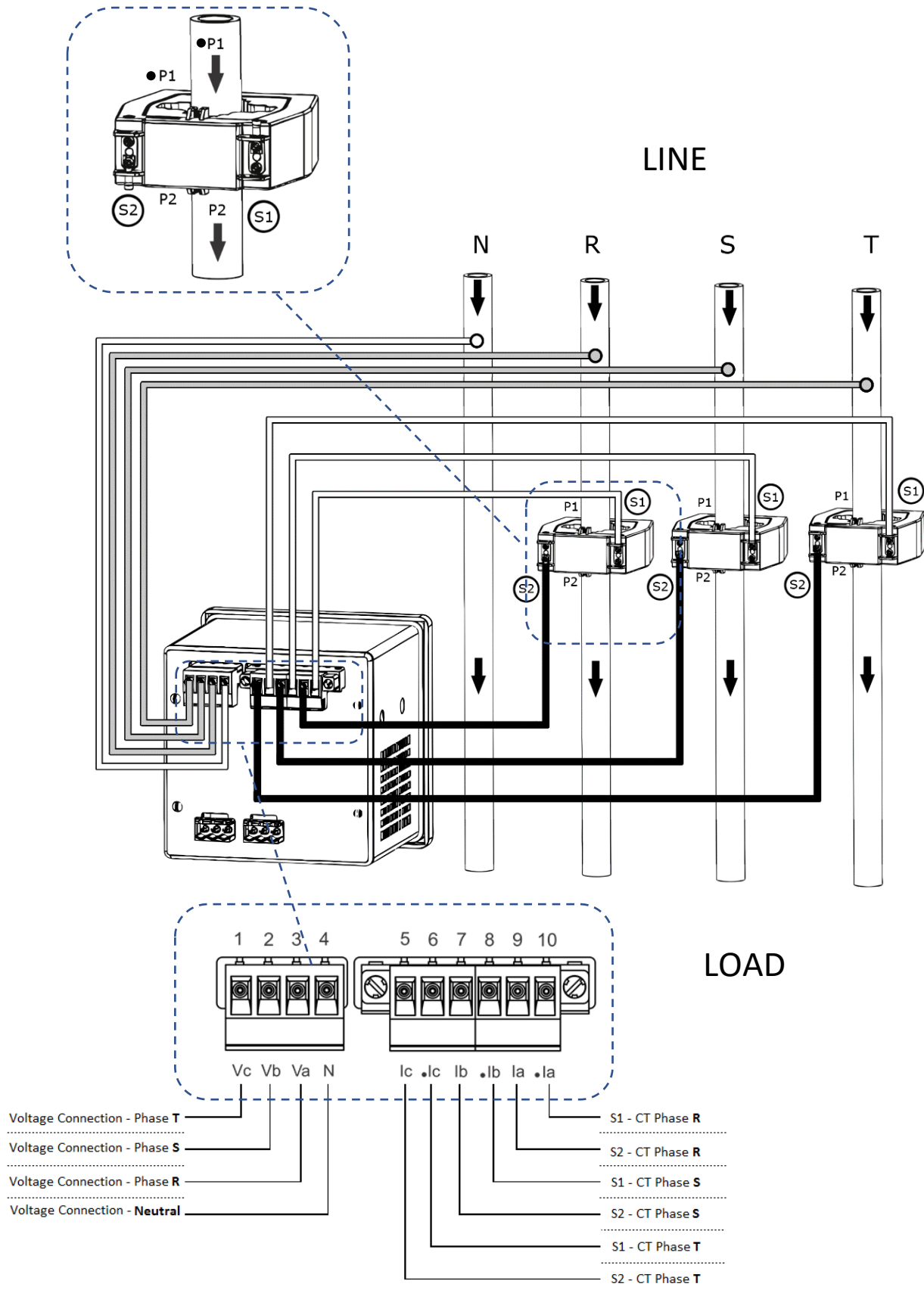
The following commands will be available when Configurations mode is accessed:

- EDITAR** : Editing of the currently selected parameter.
- PROX.** : Navigates through the pages of the configurations mode.
- ALTERA** : Confirms the changing of the highlighted parameter.
- VOLTAR** : Sends the analyzer back to the prior screen.
- DEC** : Decrements the active digit.
- INC** : Increments the active digit.
- >>** : Navigates through the available options of a selected menu.
- SAIR** : Returns to the main mode, leaving the configurations mode.

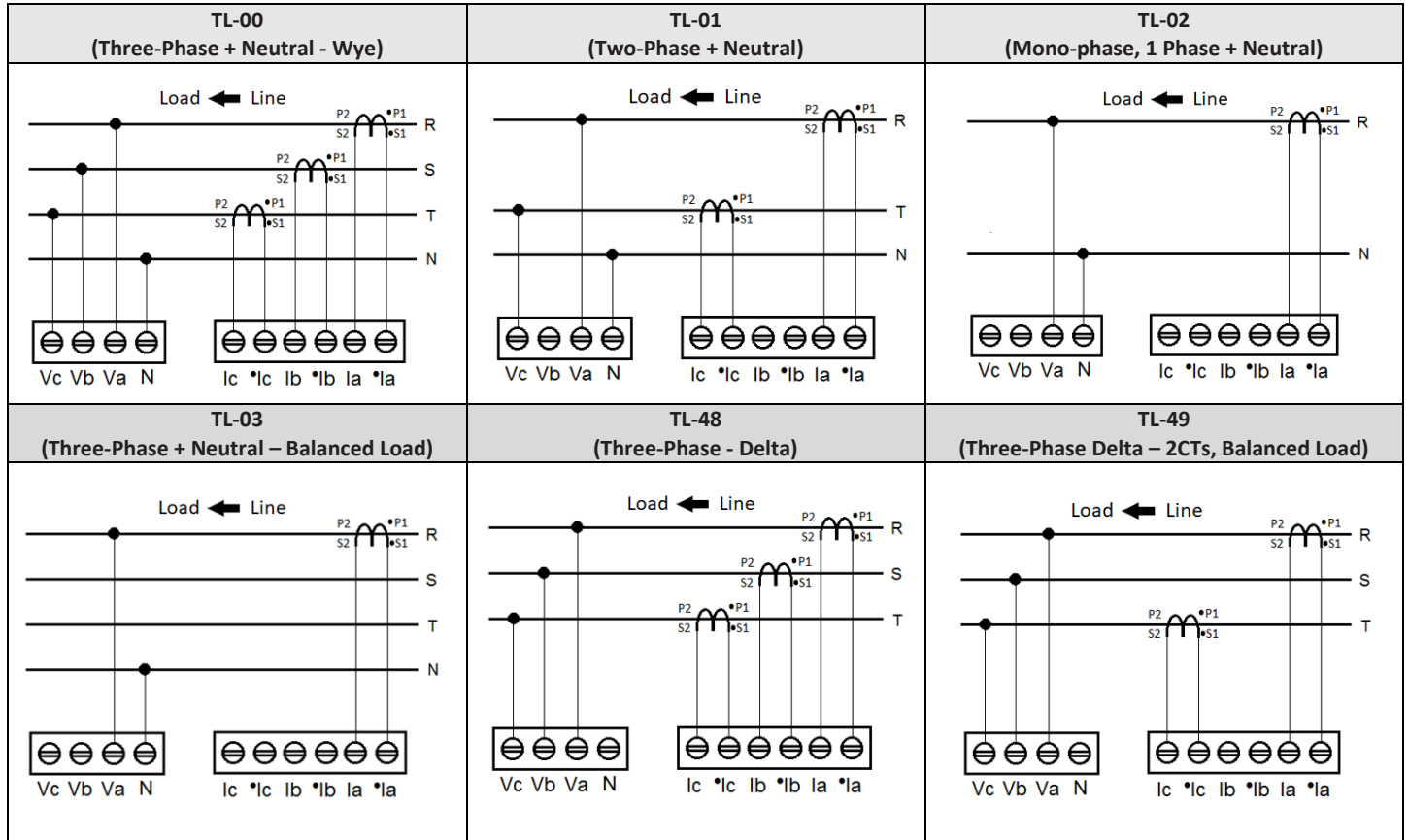
Below, menu descriptions and default settings of Mult-K Grafic:

Page	Parameter	Description	Default
1	TP	Potential Transformer Ratio Example: PT -- 440/220V, PT ratio = 0002.00	0001.00
	TC	Current Transformer Ratio Example: CT -- 1000/5A, CT ratio = 0200.00	0001.00
2	KE	KE (Pulse constant) Constant that determines the pulse rate of the related output, in Wh. This parameter needs to be configured only when the analyzer has this feature and its value must be always $\geq TP \times TC$.	0 Wh
	TL	Connection Diagram Definition of the connection diagram that will be used by the meter as a reference for parameter calculations, according to the measured circuit (Star, Delta, single-phase, two-phase, etc).	0 (Star – 3Ph+N)
3	TI	Integration time for demand calculation	15
4	Endereço	MODBUS Address*	254
	Velocidade	Transmission speed (baud rate)	9600bps
	Formato	Data Format (parity and stop bits) <small>For units equipped with Ethernet output, this is the unique option which will be present when accessing this page. For this particular case, the address must be always '1'. Default IP configuration: 10.0.0.1, default subnet mask: 255.0.0.0</small>	8N2
5	Idioma	MMI language	Port.
	Cor LCD	Display color mode (normal or reverse)	Normal
	Contraste	Display Contrast	50%
6	Memoria	Mass memory configurations, including data recording interval and parameters to be recorded.	Disabled (IA = 0)
	Relógio	Internal Clock Adjustment	Brazil (UTC-3)
	Custom	Configuration of custom screens. Up to three custom screens can be defined, using three distinct patterns (with 1, 3 or 6 parameters each).	Disabled
7	Reset	Resets energies and demands values.	
	Senha	Activates/Deactivates password confirmation for accessing the Configurations mode.	Disabled
	Ed. Senha	Editing of password for accessing configurations mode.	00021
8	Backlight	Display mode (normal or economical)	Econo

Connection Diagram Example – TL-00



Connection Diagrams (CD - TL configuration)



FAQ – Frequently Asked Questions

a. The Mult-K Grafic doesn't turn on

Check if the connection to the terminal block (E) was made as stated in step 3 and also if the voltage magnitude applied is within the working range for meter's power supply.

b. Measurement values seem incorrect

Check if voltage and current connections are corresponding to each other, i.e., each meter's channel with the same reference indication - Example: (Va, Ia* - Ia) - must receive signals from the same phase, as stated in steps 4 and 5. Also check if the polarity of CTs is correct (Correct Installing, Primary side: (LINE) P1 → P2 (LOAD) | Secondary side, S1 connected to Ix* → S2 connected to Ix).

THIS IS A QUICK USER GUIDE, WITH ESSENTIAL INFO FOR CONFIGURING AND INITIAL OPERATION OF THE METER. FURTHER DETAILS CAN BE CHECKED IN THE PRODUCT'S USER MANUAL, ALSO AVAILABLE IN KRON'S WEBSITE: www.kron.com.br.