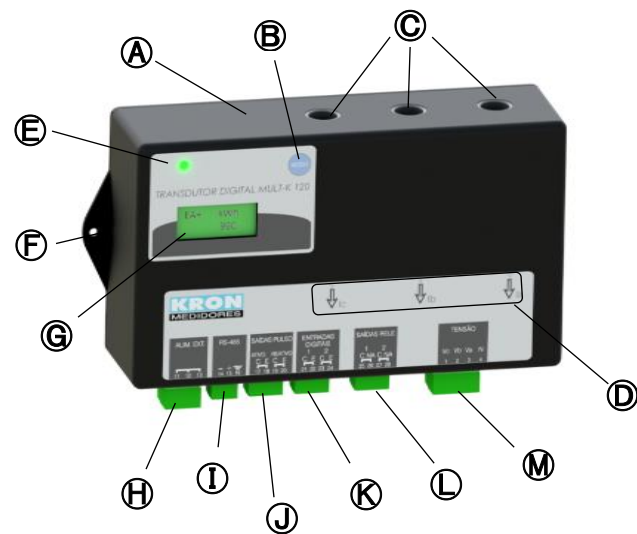


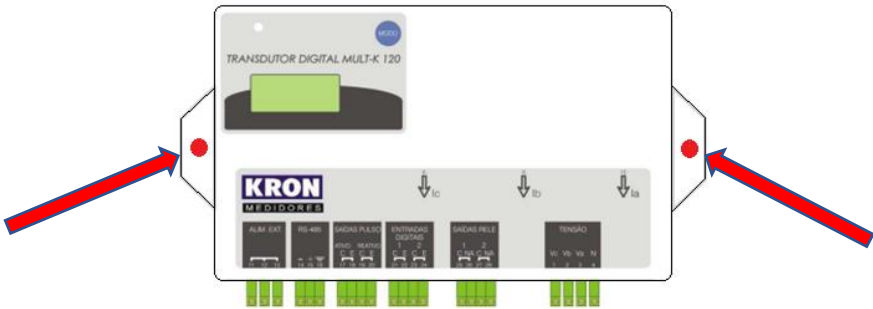
1 Knowing the Product



A	Mult-K 120	H	Power Supply
B	Navigation Key	I	RS-485 Output
C	Orifices for cable passage, maximum cable diameter of 12.6 mm	J	Pulse Output
D	Identification of orifice-to-phase correlation and current flow direction	K	Digital Inputs
E	Indicative LED	L	Digital Outputs
F	Side Flaps (Fastening)	M	Voltage Input
G	LCD Display		

2 Installing the Product

Mult-K 120 must be placed on panel’s background, using screws on the side flaps (F) to fasten the meter.



3 Power Supply Connection

Power Supply signal must be applied to the (H) 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 265Vac / 100 to 375Vdc	Working Range: 24, 48 Vdc: 80 to 120% 12Vdc: 90 to 120%
(Without Polarity)	



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 **(M)** terminal block, using the order described below:

Terminal Description	Signal to 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 measurement (orifices for cable passage)

Direct Measurement: Pass the phase cables through the current measurement orifices - **(C)**. Connections must be made as stated in **(D)** (phase correlation and current flow direction).

Orifice Description	Phase
10 – Ia	Phase 'R'
8 – Ib	Phase 'S'
6 – Ic	Phase 'T'
Measurement Range: 1,5A to 120Aac	

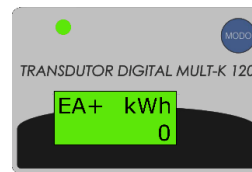
Indirect Measurement - E-01 Version: Pass the cables connected to the CT secondary side through the current measurement orifices - **(C)**. Connections must be made as stated in **(D)** (phase correlation and current flow direction).

Orifice Description	Phase
10 – Ia	Phase R - CT S1 – Cable in
	↓ Cable out – Return to CT S2 – Phase R
8 – Ib	Phase S – CT S1 – Cable in
	↓ Cable out – Return to CT S2 – Phase S
6 – Ic	CT S1 – Cable in – Phase T
	↓ Cable out – Return to CT S2 – Phase T
Measurement Range: 50mA to 30Aac	

The passing of the cables from the CT's secondary side must be made as a "loop", i.e. the first step is to connect the cable to the CT's S1 terminal, pass it through the holes of the meter from top to bottom, and then connect it to the CT's S2 terminal.

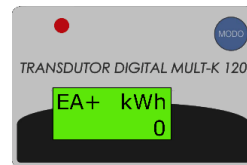
FOR MORE INFORMATION ABOUT THE CONNECTION DIAGRAMS FOR E-01 VERSION, PLEASE CHECK PRODUCT'S USER MANUAL, AVAILABLE FOR DOWNLOAD ON THE WEBSITE WWW.KRON.COM.BR.

6 Indicative LED



Greenlit: The order used to connect the Voltage signals to the **(M)** terminal block matches the positive phase sequence, commonly known as 'R-S-T'.

Greenlit and flashing: Mult-K 120 is communicating with a Modbus/Metasync N2 master through its RS-485 output.

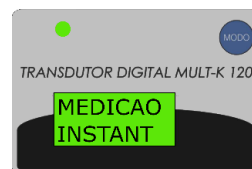


Redlit: One or more voltage signals are **not** connected to the **(M)** terminal block or voltage signals are all connected, but using negative phase sequence order.

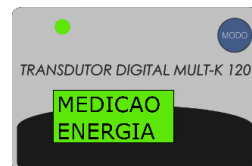
7 Accessing Operation Modes



Configuration changing is only possible via RS-485 communication.

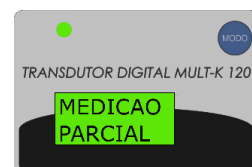


Instantaneous Measurements: Checking of V, A, W, VAr, VA, PF, Hz and THD values. To access this mode, hold the **(MODE)** key until the "MEDICAO INSTANT" message appears on the display. To navigate through the parameters, press **(MODE)** key.



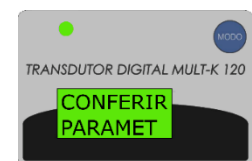
Energy Measurements: Checking of kWh+, kWh-, kVarh+, kVarh-, kW and kVA. To access this mode, hold the **(MODE)** key until the "MEDICAO ENERGIA" message appears on the display. To navigate through the parameters, press

(MODE) key.



Partial Measurements: When entering Partial Measurements mode, the meter is going to start the counting of a partial energy value, kWh+. To access it, hold the **(MODE)** key until the "MEDICAO PARCIAL" message appears on the display. When

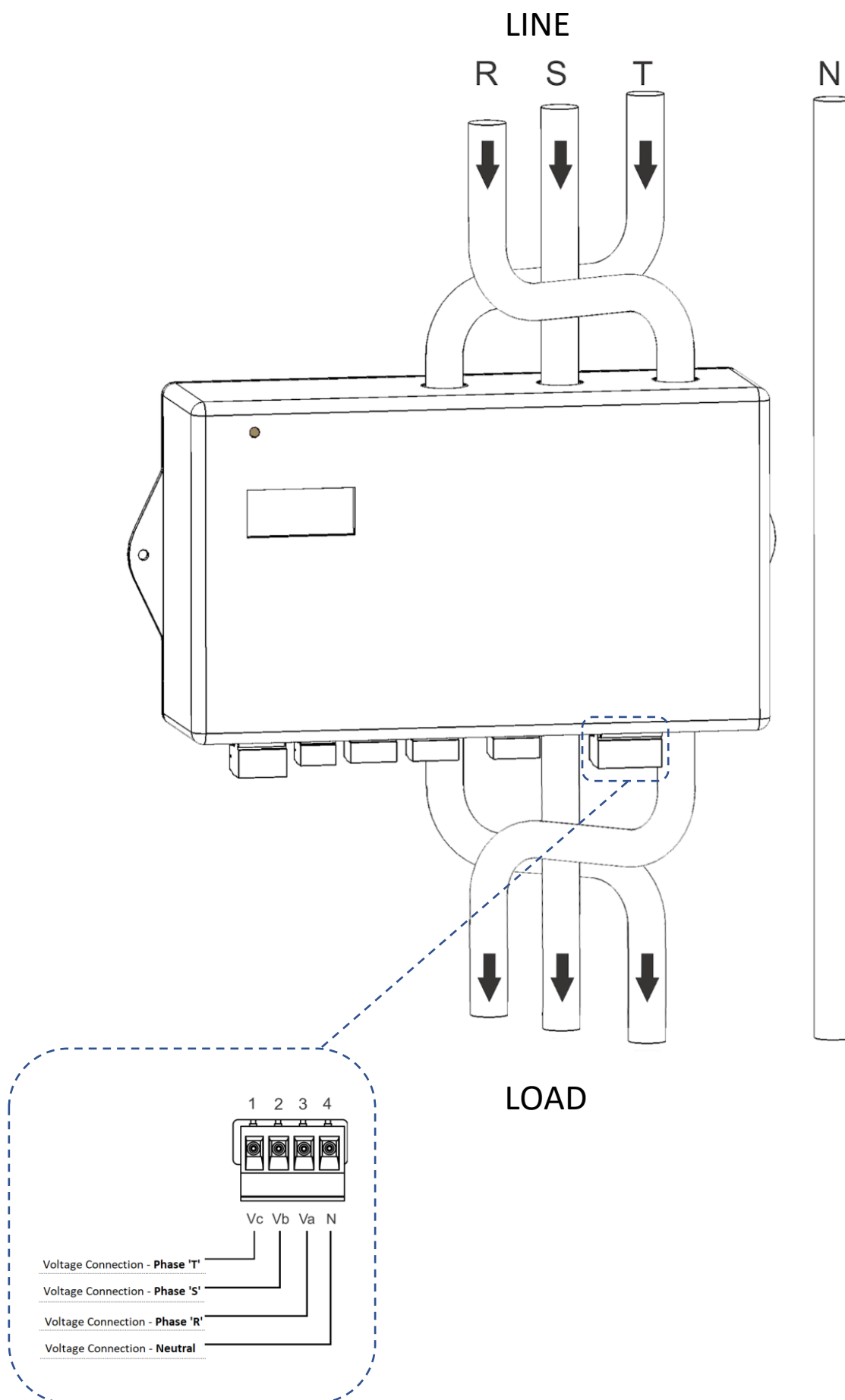
this mode is active, pressing the **(MODE)** key restarts the partial counting and holding the same key gives access to another mode.



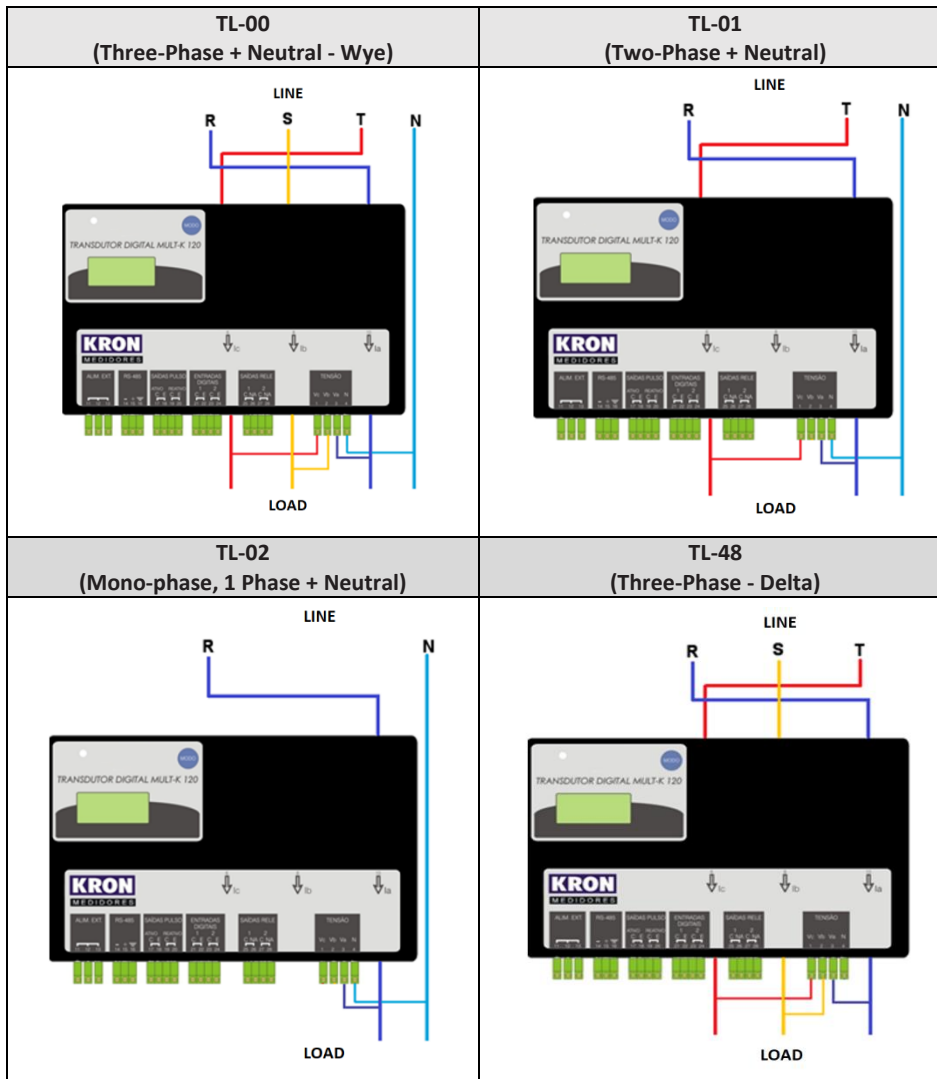
Parameter Checking: Checking of active configurations, such as PT and CT ratios, connection diagram, integration time (demand), and communication parameters.

To access this mode, hold the **(MODE)** key until the "CONFERIR PARAMET" message appears on the display. To navigate through the parameters, press **(MODE)** key. **Configuration changing is only possible via RS-485 communication.**

Connection Diagram Example: CD-00 (Direct Measurement)



Connection Diagrams (CD - TL configuration)



FAQ – Frequently Asked Questions

a. Meter doesn't turn on

Check if the connection to the terminal block (H) was made as stated in step 3 and 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: (V_a , $I_a^* - I_a$) - 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 $I_x^* \rightarrow$ S2 connected to I_x).

*For more info about the connection diagrams of the E-01 version, please check product's user manual.

c. Which parameter should be read to check energy consumption?

To read energy consumption info, the user must verify the Positive Active Energy parameter (EA). This parameter is the first that appears when "MEDICAO ENERGIA" mode is accessed. "EA" is a cumulative value, so, to obtain the energy consumption during a period of time, a prior reading must be subtracted from the current value.

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.