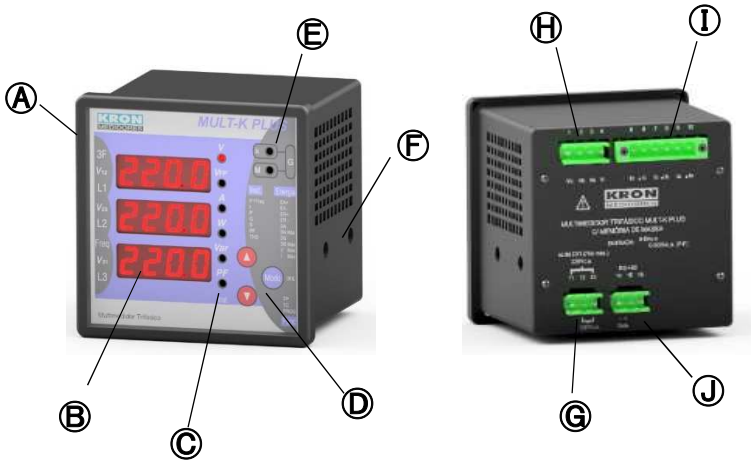
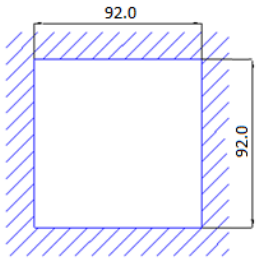
## ❶ Knowing the Product




| | | | |
|---|---|---|---|
| Ⓐ | Mult-K Plus | Ⓕ | Side locks |
| Ⓑ | LED display<br>Three rows for parameter checking (measurements and configurations) | Ⓖ | Power Supply Input |
| Ⓒ | Indicative LEDs<br>Type of parameter currently showed in the display | Ⓗ | Voltage Input |
| Ⓓ | Navigation keys | Ⓘ | Current Input |
| Ⓔ | Indicative LEDs<br>Multiplicative factors (k and M) | Ⓙ | RS-485 Output |

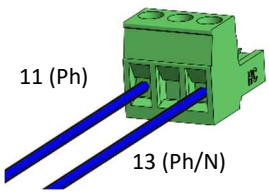
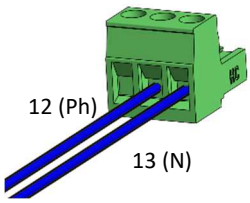
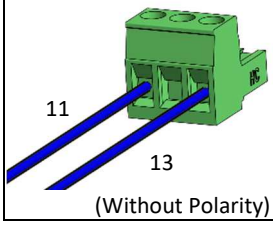
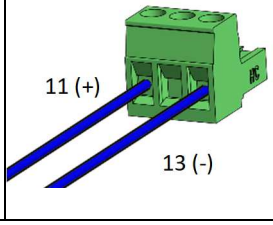
## ❷ Installing the Product

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




## ❸ Power Supply Connection

Power Supply signal must be applied to the Ⓖ 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:<br>85 to 265 Vac / 100 to 375Vdc | Working Range:<br>24, 48 Vdc: 80 to 120%<br>12Vdc: 90 to 120% |
|  |  |

**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.

## ❹ Voltage Input Connections

Connect phases and neutral references to the Ⓗ 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** | |

## ❺ Current Input Connections

Connect phase references to the Ⓘ 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)** | |

## ❻ Accessing Operation Modes


**Instantaneous Measurements:** checking of **V, A, W, VAr, VA, PF** and **Hz** values. To access this mode, hold the ▲ and Modo keys simultaneously for three seconds.


**Energy Measurements:** checking of **kWh+, kWh-, kVArh+, kVArh-, kW** and **kVA** values. To access this mode, hold the ▼ and Modo keys simultaneously for three seconds.


**Function (Configurations):** Configuration of constants for PT and CT, connection diagrams, integration time (demand), communication parameters and reset command (energies and demands). To access this mode, hold the ▼ and ▲ keys simultaneously for three seconds.

## ❼ Configuring the Product


The first step is to access Function mode, by holding the ▲ and ▼ keys simultaneously until the message **Func** appears in L1. Then, to navigate through menus use ▲ or ▼ keys. To enter a specific menu, use Modo key.

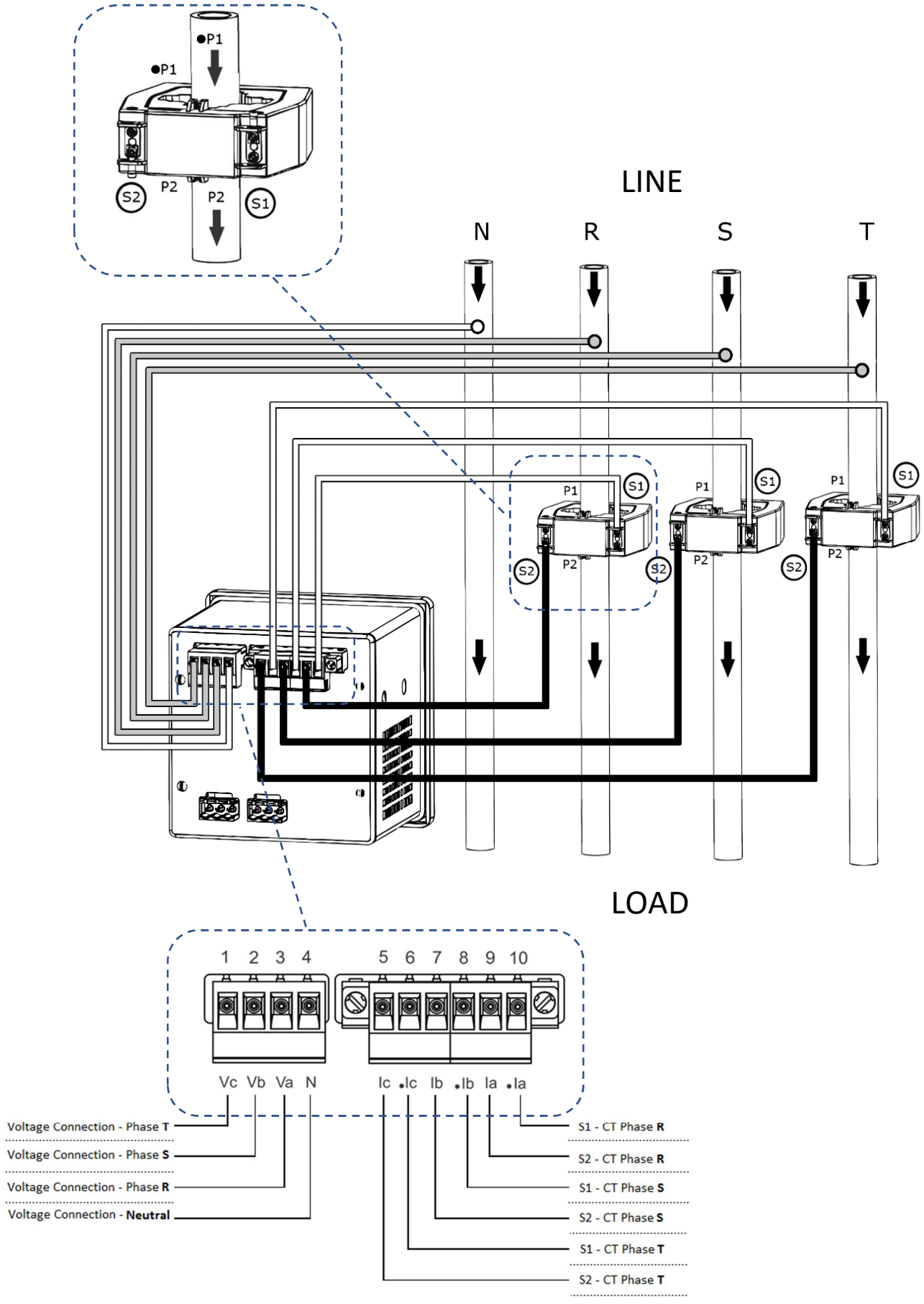

**PT Configuration:** Definition of Potential Transformer ratio. Example: 440/220V, PT= 0002.00. Use Modo key to navigate through the digits and ▲, ▼ to increment or decrement the value of the active digit. If no PT is used, PT ratio must be 0001.00


**CT Configuration:** Definition of Current Transformer ratio. Example: 500/5A, CT = 0100.00. Use Modo key to navigate through the digits and ▲, ▼ to increment or decrement the value of the active digit. If no CT is used, CT ratio must be 0001.00

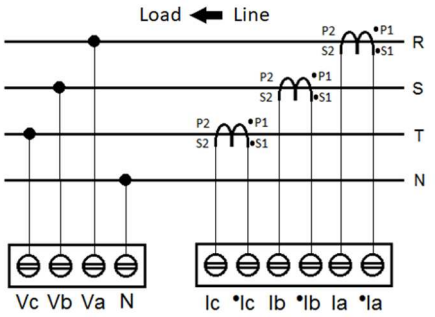
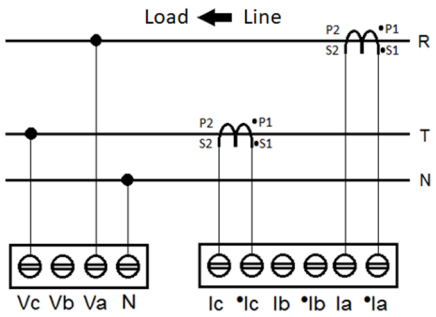
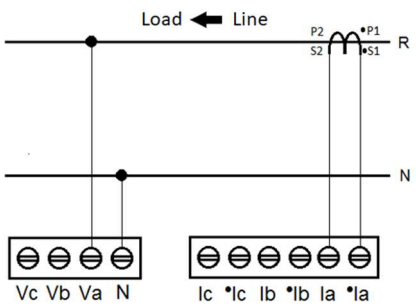
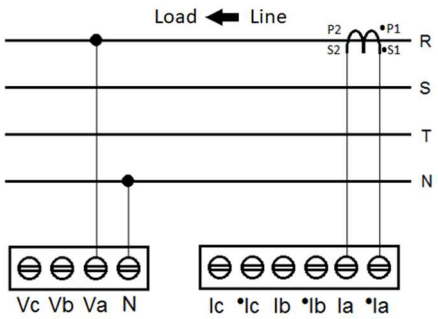
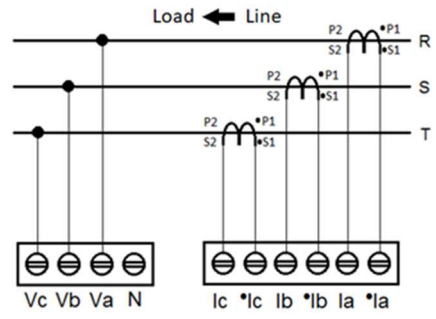
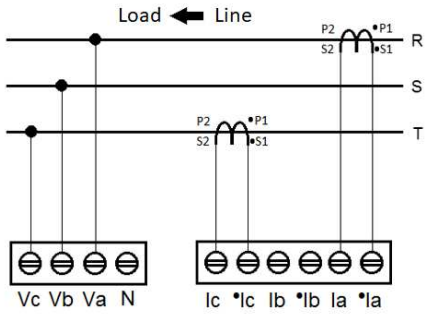

**CD Configuration:** Definition of Connection Diagram, according to the circuit measured. Use Modo key to navigate through the digits and ▲, ▼ to increment or decrement the value of the active digit. Please refer to the "Connection Diagrams" table for checking the available CD options.

**To confirm a configured value, press Modo till all digits stop flashing, only the LEDs 'k' and 'M' will be blinking in this situation.**

## Connection Diagram Example: CD-00



## Connection Diagrams (CD - TL configuration)

| TL-00<br>(Three-Phase + Neutral - Wye) | TL-01<br>(Two-Phase + Neutral) | TL-02<br>(Mono-phase, 1 Phase + Neutral) |
|---|---|---|
|  |  |  |
| **TL-03**<br>**(Three-Phase + Neutral, Balanced Load)** | **TL-48**<br>**(Three-Phase - Delta)** | **TL-49**<br>**(Three-Phase Delta – 2CTs, Balanced Load)** |
|  |  |  |

## FAQ – Frequently Asked Questions

### a. Meter doesn't turn on

Check if the connection to the terminal block Ⓖ was made as stated in step ❸ 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 ❹ and ❺. 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).

### 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 Energy Measurements 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.**