



Voltage Monitoring Relays

VM range



The VM range is designed to protect equipment connected to AC network against temporary over or under voltages due to supply network events (overload, phase loss, neutral breakdown...). The VM units control permanently the AC network and disconnect the equipment or the installation in case of fault detection, in order to avoid destructions. After the failure disappearance, they reset automatically and re-connect the equipment/installation to AC network. Several versions are available :

VM230/TRI

This version, the most complete, is designed to control continuously a 3-phase 230/400 V network (for 120/208 V AC network = VM120/TRI) in order to detect any kind of AC failures, as overvoltages, undervoltages, phase loss, phase reversal, frequency shift.

In case of failure detection, the VM230/TRI will activate an output dry contact in order to drive an external line contactor and to disconnect the internal network from the external electrical grid. After the failure disappearance, the VM230/TRI will reset automatically and re-connect the AC line through the contactor.

The VM230/TRI is equipped in front side with LCD display designed:

- to display permanently the AC voltage of each phase,
- to inform about the type of failure detected,
- to tune the thresholds (voltage and time),

The product is installed on standard symmetrical DIN rail.

To provide maximum safety, especially in case of lightning surge voltages, it is recommended to install a AC Surge Protector (CITEL DS44 type) upstream the VM230/TRI.

VM230/DIN

Simplified and single version, in DIN rail mounting box. External contactor required.

VM230/F

Simplified and single version, in AC plug-in box. Designed for protection of one equipment (up to 3600 W). No external contactor required. Surge protection stage included.

- Under-Over Voltage protection
- 3-phase and single phase versions
- DIN or AC plug version
- Automatic operation
- Light indicators
- Adjustable and LCD display (VM/TRI)

Characteristics

CITEL part number	VM../TRI	VM../DIN	VM230/F
AC network	3-phase	Single phase	Single phase
Operating voltage	230/400V, 50 Hz (VM230/TRI) 120/208V, 60 Hz (VM120/TRI)	230/400V, 50 Hz (VM230/DIN) 120/208V, 60 Hz (VM120/DIN)	230V, 50 Hz
Format	DIN box (see drawing)	DIN box (see drawing)	AC plug (french type) (see drawing)
AC network interruption	by external contactor	by external contactor	by internal relay
Maximum power consumption	related to external contactor	related to external contactor	3,6 kW
Undervoltage threshold for disconnection	170 V (adjustable)	170 V*	170 V*
Overvoltage threshold for disconnection	270 V (adjustable)	270 V*	270 V*
Status indication	by LCD display: - Phase voltages - Failure type - Time	by leds : Yellow : undervoltage Green : voltage ok Red : overvoltage	by leds : Yellow : undervoltage Green : voltage ok Red : overvoltage Buzzer : under/overvoltages
Threshold adjustment (voltage and time)	Yes (tuning through LCD screen)	No *	No *
Surge protection feature	No	No	Built-in (In=2,5 kA/Up=1,5 kV)

*) Thresholds adaptable on factory, on request.

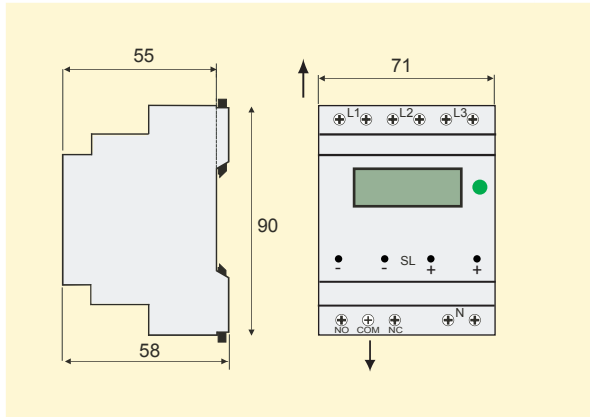


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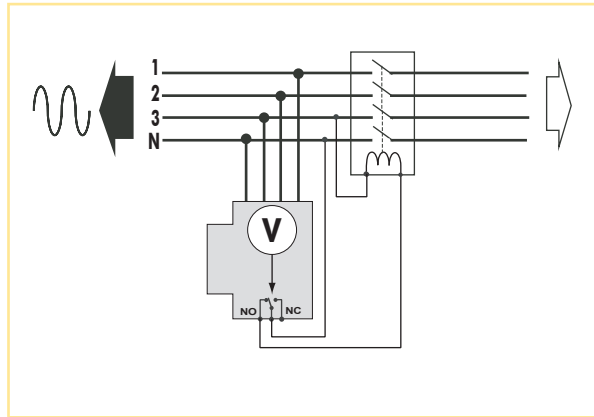
VM range

Dimensions (in mm)

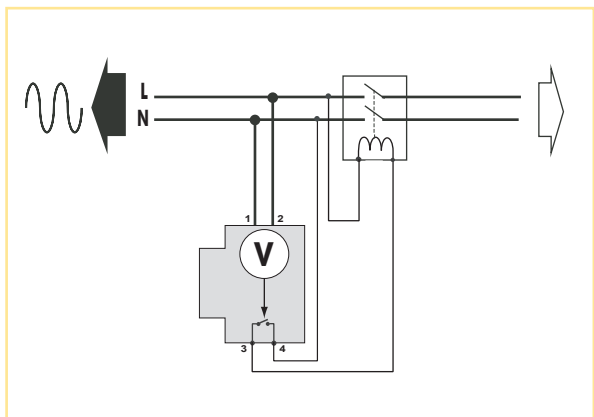
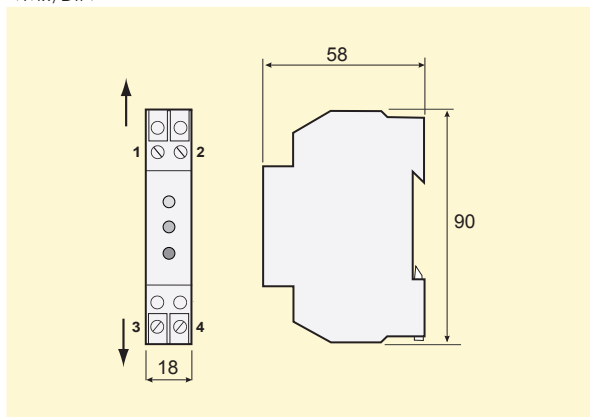
VM../TRI



Electrical diagrams



VM../DIN



VM230/F

