



An ISO 9001:2015 Company

VOLTAGE TESTER

Model KM 69 / KM 66



SPECIAL FEATURES :

- EF-Detection
- RCD leakage-path (KM 69)
- LCD Indication (KM 69)
- RST Phase Rotation Detection (KM 69)
- AC-Detection Shaker (KM 69)

FEATURES :

- Handy & Stylish, Fits Comfortably in one's hand
- 19mm Probe Pitch For Quick European Receptacle Testing
- 4mm Test Tips with IP2X Retractable shroud for IEC61243-3 Ed3
- Detachable (Black) test lead for easy replacement.
- User Replaceable Screw-On stationary (Red) Probe Body
- Battery-less ELV Limit (120VDC/50VAC) LED Indication
- Battery-less DCV & ACV Auto-selection with LED polarity indication
- Battery-less DCV 8-Ranges LED Indication : 12, 24, ... to 1000V
- Battery-less ACV 8-Ranges LED Indication : 12, 24, ... to 1000V
- Automatic Power On & Power Off
- Non-contact EF-Detection (NCV)
- Probe contact EF-Detection for more precise indication of live
- Continuity : Audible beeper & visible LED indications
- Display Backlight & flash-light for easy viewing in the dark (KM 69)
- True RMS ACV Reading on LCD Numeric Display (KM 69)
- AC-Detection Shaker indicates ACV is being measured (KM 69)
- RCD Leakage Load for 230V AC / 30mA RCD Circuit Breakers (KM 69)
- RST Phase sequence / Rotation indication (KM 69)
- Low Battery warning for battery operated functions & features
- Battery Access Door

GENERAL SPECIFICATIONS :

- * **LCD Display** : 3½ Digits 1999 counts (KM 69)
- * **Update Rate** : 5 per second nominal (KM 69)
- * **Sensing** : TRMS sensing for LCD indication (KM 69); Average sensing for LED indication (KM 66)
- * **Operating Temperature** : -10°C ~ 55°C
- * **Relative Humidity** : ≤ 90%
- * **Altitude** : Operating below 2000m
- * **Storage Temperature** : -20°C ~ 65°C, ≤ 80% R.H. (with battery removed)
- * **Temperature Coefficient** : Nominal 0.15 X (specified accuracy) / °C @ (10°C ~ 18°C or 28°C ~ 50°C), or otherwise specified
- * **Pollution Degree** : 2
- * **Low Battery** : Below approx. 2.6V
- * **APO Timing** : Idle for 16 seconds
- * **Power Consumption (typical)** : 2.7mA for Power-on ready & DCV; 50mA for ACV (with shaker on) 105mA For RCD; 40mA for Buzzer on @ Continuity or EF function; 55mA for resistance or capacitance; Add 30mA for backlight on. (KM 69). 1mA for Power on ready; 40mA for Buzzer on @ Continuity of EF function (KM 66).
- * **APO Consumption (typical)**: 12µA (KM 69), 6µA (KM 66)
- * **Power Supply** : 1.5V AAA Size (NEDA 24A or IEC LR03) alkaline battery x 2
- * **Dimension** : 278(L) x 57(W) x 40(H)mm
- * **Weight** : Approx. 235gm

SAFETY :

- Meets IEC/EN61010-1Ed. 3.0, IEC/EN61010-2-033Ed. 1.0, IEC/EN61243-3:2014 to CAT III 1000V & CAT IV 600V
- Transient Protection : 8kV lightning surge (1.2/50µs)
- Measurement Category : CAT III 1000V & CAT IV 600V AC & DC
- Overload Protection : 1100VDC & VAC rms
- Type of Protection : IP65 Per EN60529 - water and Dust Resistant.
- Rugged fire retarded double injected casing
- E. M. C. : Meets EN61326-1:2013
For LCD display only : (KM69)
Total Accuracy = Specified accuracy + 45d @ an RF field of 3V/m.



ACCESSORIES :

Batteries, User's manual, Screw-on stationary red probe and detachable leaded black probe.

Note: All Specification are Subject to change without prior notice.

ELECTRICAL SPECIFICATIONS : KM 69 / KM 66

Accuracy is given as \pm (% of reading digits + number of digits) or otherwise specified @ 23°C \pm 5°C & less than 75% R.H.

DC & AC VOLTAGE (LED)

Voltage Marking	Typical Threshold (Turn ON)	Typical Threshold (Turn OFF)
12 V	9.6 V	7 V
24 V	19.2 V	14 V
50 V	40 V	33 V
120 V	96 V	67 V
230 V	184 V	140 V
400 V	320 V	283 V
690 V	552 V	490 V
1000 V	800 V	760 V

LED Threshold ON : < 85% of Voltage Marking.

LED Threshold OFF : > 110% of pre-voltage Marking.

Input Impedance : 12V, 24V, 50V Voltage Markings : 100K Ω , 160pF nominal.

120V, 230V, 400V, 690V, 1000V Voltage Marking : 200K Ω ~ 500K Ω
vary linearly, 160pF nominal

ACV Frequency Responses : 45Hz ~ 65Hz

Duty ratio : Continuous @ \leq 300V

Time rating (t) ON for 30 seconds &
recovery time (r) OFF for 2 minutes@ > 300V

RCD LEAKAGE LOAD (KM69)

RCD Circuit Breakers Intended : 30mA/230Vac

Activation Inhibited : at <201V or >264V

Activation Indication : flashing RCD-LED accompanied with beep sound

Path Impedance : 6.1 K Ω nominal, PTC protected

Load Current : \geq 30mA typical at 230V

Activation Interval¹⁾ : Maximum 5 seconds with automatic cutoff

1) In the event of a full continuous 5second activation interval, the protection PTC will heat up and affect the load current magnitude thereafter.

Allow cooling for 120 seconds before the next activation then.

Electric field EF-Detection

Non-contact EF-Detection : an antenna is located at the top-right side of the tester

Probe-contact EF-Detection : Via Black (-) test probe for direct-contact detection. it is mainly for identification of live connections using maximum sensitivity.

Detection Frequency : 50/60Hz

Strength Indication : Signal Strength is indication by the flashing rate of  Continuity-LED accompanied with beep sound.

Display successive bar-graph segments proportional to the field strength on LCD. Typical Non-contact EF-Detection values are shown in the following table.

Typical Non-contact Voltage Range	LCD Bar Graph Indication
15V to 55V	—
30V to 95V	— —
55V to 170V	— — —
Above 120V	— — — —

DC & AC VOLTAGE (LCD display) (KM69)

Range	Threshold	Accuracy
DC 199.9V, 1000V	> +27VDC or < - 4.5VDC	\pm (1.5%rdg + 3dgts)
AC 199.9V, 1000V	> 8 VAC	\pm (2.5%rdg + 4dgts)

Input Impedance : 12V, 24V, 50V Voltage Marking : 100K Ω , 160pF nominal

120V, 230V, 400V, 690V, 1000V Voltage Markings :

200K Ω ~ 500k Ω vary linearly, 160pF nominal

ACV Frequency Response : 45Hz ~ 65 Hz

Duty ratio : Continuous @ \leq 300V

Time rating (t) ON for 30 seconds &
recovery time (r) OFF for 2 minutes@ > 300V

AC DETECTION SHAKER THRESHOLD (KM69)

Shaker Threshold : Between 8V & 15V AC

RST 3-Phase Rotation Detection (KM69)

Voltage Range : 165V ~ 1000V

Frequency Range : 45Hz ~ 65Hz

Applications : Intended for Y-Connection 3P4W & High-leg Δ -Connection 3P3W System.

Not Intended for Δ -Connection 3P3W System without an earth-ground neutral.



AUDIBLE CONTINUITY

Open Circuit Voltage : 0.7 DC Typical

Audible Threshold : between 500K Ω and 750K Ω

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