



## Acoustical Universal Tester VARIOTEST

Condor **VARIOTEST** is a multi-purpose measuring and testing instrument with an acoustic signal, it measures resistances, direct and alternating voltages.

The appliance is voltage-proof up to 500 V AC / DC.

The operation of **VARIOTEST** requires a (possibly leak-proof) pile 9 V

Pitch of tone or change in frequency help differing between DC and AC or resistance values.

**VARIOTEST** is useful for

- checking of continuity or resistance
- testing of alternating and direct voltage up to 500 V AC / DC
- testing of polarity on direct voltage 6 up to 500 V AC / DC
- testing of function of ELCB's with rated tripping current max. 30 mA
- checking of phase, neutral bus and protective conductor
- checking of semiconductors - like diodes, transistors etc,

### Checking of continuity or resistance up to 20 kΩ

The buzzer's fundamental frequency is in case of a short circuit (test plug short circuited or test sample has low-resistance continuity) at around 2 kHz. This frequency increases with rising value of resistance. At around 40 kΩ buzzer is no more audible.

### Testing of direct voltage up to max. 500 V

Link red test plug up with positive pole, black plug with negative pole. On low voltages of 6 - 10 V fundamental frequency of around 2 kHz will sound. Pitch of tone will change with increasing voltage.

### Testing of polarity on direct voltage 6 V- 500 V

Where voltage is known and higher than 6 - 10V and test plug is properly linked up with test contact, fundamental frequency of 2 kHz sounds. In this case positive pole is on red test plug and negative pole is on the black. In case of wrong polarity, above 6 -10 V nothing more is audible what means that positive pole is on black test plug and negative pole on the red one.

### Testing of alternating voltage up to 500 Vrms

Colour of test plug unimportant. On low voltages of around 10 V the fundamental frequency of 2 kHz sounds, however modulated with a.c. frequency (normally 50 Hz). The pitch of fundamental frequency depends on voltage, modulation depends on frequency of voltage.

### Testing of ELCB's with $I_{\Delta N} = 30 \text{ mA}$

With the test plugs being connected with phase and protective conductor ELCS with rated tripping current of 30 mA must trip.

With the test plugs being connected with neutral bus and protective conductor ELCB must not trip, buzzer sounds with fundamental frequency of 2 kHz.


### Checking of phase, neutral bus and protective conductor



With the test plugs linked up with phase and phase, phase and neutral or phase and protective conductor (provided no ELCB of 30 mA is installed), buzzer sounds with fundamental frequency of 2 kHz and modulated mains frequency.

With the test plugs linked up with neutral and protective conductor, only fundamental frequency of 2 kHz will sound.

## Checking of semiconductors

Following scheme should be observed, signal will sound always with fundamental frequency of 2 kHz

Checking of	Test Sample	Connection black	Test Plugs red	Signal
diodes		A anode	C cathode	yes
		C cathode	A anode	no

transistors		black	red	NPN	PNP
NPN		E emitter	B basis	no	yes
		B basis	E emitter	yes	no
		E emitter	C collector	no	no
PNP		C collector	E emitter	no	no
		B basis	C collector	yes	no
		C collector	B basis	no	yes



### Attention!

When measuring voltages > 50 V please use probes according to prescriptions! After influence of external voltage > 50 V the appliance will be fully operable after about 1 minute since protective resistor must cool down.

### Technical Data Variotest

Technical operating data	
Test range	0 – 20 kΩ 0 – 500 V
Audio frequency	up to 20 kHz
Leads	80 cm
Measuring probes	crush proof

Technical operating data	
Protection	protective double insulation
Clearance and creepage distances	acc. to VDE 0110
Power supply	Battery 9V
Included in the scope of supply	Block IEC 6 F22



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