
MOBILE DIELECTRIC TEST SYSTEM

LDV-5/E



The measuring principle of the DSP-based $C / \tan \delta$ test system LDV-5/E bases on the advanced capacitance and dissipation factor measuring system LDV-5. It is extended by additional components for automatic insulation tests, such as a 20 kV resonant power supply, a standard capacitor as well as the necessary connection cables and a transport trolley.

The LDV-5/E is especially designed for on-site dielectric measurements of high- and low voltage insulations, such as voltage and power transformers as well as generators and motors. Periodic diagnostic tests can be performed easily and inexpensively. The fully automatic $C / \tan \delta$ measuring system is also able to perform measurements under electromagnetically disturbed field conditions with highest precision. Also grounded test objects can be measured without any loss of the measuring accuracy due to the potential-free operation of the measuring sensors.

This computer-aided device features a very user-friendly software and can automatically measure, record and analyse all dielectric quantities of insulations in real time mode. A lot of individual diagrams allow an evaluation of the measuring results in different dependencies. The software is able to generate test reports and allows a further data processing due to the storage in EXCEL format.

Optional this system is extendable by the Digital Partial Discharge Measuring and Diagnosis Test System LDS-6 in order to have a full-integrated dielectric diagnostic test system.

Measuring parameter:

	Range	Resolution	Accuracy
Capacitance C_x	from 0.1 pF up to 2 μ F	0.1pF	± 0.001 rdg + 1 pF
Dissipation factor $\tan \delta$	from $1 \cdot 10^{-4}$ up to 100 ^(*)	$1 \cdot 10^{-6}$	± 0.01 rdg + 10^{-5}
Test specimen current	up to 1 A ^(**)	0.01 mA	± 0.01 rdg
Test voltage	0 up to 1000 kV	0.001 kV	± 0.005 rdg + 1 V
Frequency	from 10 Hz up to 400 Hz	0.0001	± 0.0001 rdg + 1 mHz
Power factor ($\cos \varphi$)	0 up to 1	0.01	± 0.01 rdg

^(*) with built-in standard capacitor, from $1 \cdot 10^{-6}$ up to 100 with external compressed-gas standard capacitor, add. available

^(**) up to 15 A with optional current extension unit, add. available

- Other displayable values:**
- active power and reactive power
 - resistance
 - standard deviation, modulation level, system time, time duration

- Features:**
- Signal acquisition, -amplifying, -digitization completely implemented in the sensors
 - Potential free, optical, digital data transmission
 - Frequency independent and frequency selective measurement
 - Extremely high precision of the measured values, best automatic modulation
 - Continuous measurement without bridge balancing
 - Real time display of all loss-impedance characteristics (graphically and tabular scheduled)
 - Long time measurement and monitoring by using automatic storage routines

- Operation conditions:**
- temperature: from + 5 °C up to + 40 °C
 - humidity: up to 95 %
 - IP20

- Delivery volume:**
- Resonating inductor with variable frequency of the energizing voltage
 - output voltage: max. 20 kV, 30 - 400 Hz
 - output power: 400 Var (frequency / voltage operation)
1800 Var (primary resonant operation)
40 kVar (secondary resonant operation) ^(***)
 - input voltage: 115 / 230 V, 50 / 60 Hz
 - input power: 600 VA
 - Built-in Standard Capacitor (rated voltage 20 kV, rated capacitance about 100 pF)
 - Connecting cables inclusive HV cable
 - Fibre optic link cables
 - Measuring sensors with internal battery and sensor charger units (2 pcs.)
 - Industrial Notebook Computer, useable in harsh environments
 - PC Operating System Software Microsoft Windows®NT 4.0 Workstation
 - Measuring Software LDV-5/E, ready installed
 - Protocol printer
 - Transport case (travel cart with tires for easy transportation over distances)
(approx. 700 x 550 x 1200 mm, approx. 100 kg)

- Optional:**
- Extension with Digital Partial Discharge Measuring and Diagnosis System LDS-6

^(***) with optional external reactor, add. available