



HIGH VOLTAGE TEST & MEASUREMENT EQUIPMENT

OVERVIEW



high voltage
testing equipment

KEP

CABLE FAULT LOCATION & TEST SYSTEMS

CABLE TEST VANS

KEP's vehicle-based systems allow testing of low to medium voltage cables up to 40 kV. With standard offering incorporating a surge wave generator, a time domain reflectometer, an audio frequency generator and a receiver, KEP's cable test vans make readily available the most appropriate tools for cable fault proof testing, pre-location, and pinpointing. Due to the systems' user-friendly interface, both expert technicians and less-experienced personnel can efficiently achieve precise, reliable test results in accordance with the industry's performance and safety standards. The KEP ETL cable testing systems for vehicle installation can be adapted to individual user needs.



■ COMPACT VEHICLE-BASED SYSTEMS ■

The **ETL-8** is a multi-functional vehicle-based system for cable testing up to 8kV DC, providing:

- Cable testing up to 8kV DC
- Cable fault burning
- Cable fault prelocation: TDR mode, Arc Reflection (Single and Multi-shot), Impulse Current, Voltage Coupling
- Fault pinpointing with a surge generator and a ground microphone
- Cable route tracing (optional).



■ INTEGRAL CABLE TEST & FAULT LOCATING SYSTEMS ■

The **ETL-40V** is modular diagnostic and test equipment, which is designed for testing and fault location on both LV and MV cables, including:

- Cable testing up to 40 kV DC at max. current of 100 mA
- Burning up to 20 kV / 1 A
- Surge energy up to 2000 J
- Fault prelocation in: TDR mode, Arc Reflection (Single and Multi-shot), Impulse Current, Voltage Coupling
- Automatic test procedure
- Fault location using step voltage mode (optional).

CABLE FAULT LOCATION

■ LOW FREQUENCY GENERATORS ■



The **LFG-50** can be used for locating and tracing underground metal communications such as any cables with metal cores and metal pipes. In addition, it helps to easily detect short circuits on cables and identify a cable within a group of other

cables. The LFG-50 can operate either in a single-frequency or multi-frequency mode, transmitting three frequencies at the same time. The signal can be transmitted to an object via direct connection or via an internal transmission loop antenna, which is embedded in the cover lid.



The **LFG-2500** uses a special method of low frequency modulation of the output signal. Modulation is performed by rectangular pulses with a frequency of 1 Hz in such a way that during the first half-cycle of the modulating voltage a signal with a frequency of 1024

Hz is generated, and a signal with a frequency of 2048 Hz – during the second half-cycle. The advantage of this modulation method is that, provided there is a receiver with receiving frequencies of 1024 Hz and 2048 Hz (such as PT-14), the signal of both frequencies can be received while the switch between the two is done on the receiver itself. In the continuous generation mode, a signal with a frequency of 1024 Hz is generated.

■ CABLE ROUTE TRACING SET ■



The **PT-14** is used for cable line location, tracing and depth measurement. Also, using the receiver the user can locate T- and Y-splices, under-surface transformers, and test a cable's shield integrity.



■ SURGE WAVE LOCATOR SET ■

The **P-900** is designed to locate underground cables with an inductive method, measure the depth to the cable, locate short-circuits in the cable core and insulation faults in high voltage power cables with an acoustic method.

■ TIME-DOMAIN REFLECTOMETER ■



The **RIF-9** is used to determine the distance to a fault or discontinuity in symmetric and asymmetric cables using time domain reflectometry. It can be used either as a standalone device in the TDR mode or in conjunction with the HV-module (e.g. a cable test van or

a surge wave generator), working in the arc reflection (ARC), impulse current (ICE) and decay modes.

■ PORTABLE FAULT LOCATING SYSTEM ■



The **SWG-12 / SWG-32** is a complex solution for safe, fast and easy locating of a fault on low and medium voltage underground cables. It includes a powerful high-voltage unit with test, burn and surge generation modules, and a time-domain reflectometer for cable fault prelocation.

HIGH-VOLTAGE TESTING

HIGH POTENTIAL TESTERS

■ PORTABLE AC DC HIPOT TEST SETS ■



The **HVTS-70/50(L)** is used for DC high-voltage testing up to 70 kV of power cables and power cables accessories, as well as AC high-voltage testing up to 50 kV at 50 Hz of busbars, switchgear, dielectric insulators, and other dielectric materials with relatively low electric capacitance. The

HVTS-70/50(L) offers both manual and automatic testing, automatic discharging, and a friendly menu. Optionally, the control unit can be supplemented with a remote control integrating an 'emergency button' for additional safety. Also, the test system could come with a trolley to ease transportation.



The **HVT-70/50** is used for DC high-voltage testing up to 70 kV of power cables and power cables accessories, as well as AC high-voltage testing up to 50 kV at 50 Hz of busbars, switchgear, dielectric insulators, and other dielectric materials

with relatively low electric capacitance. The HVT-70/50 operates based on a reliable, time-proven technology and features a robust analog display. It is simple to use and offers great value at a reasonable cost.

■ VLF HIPOT TESTER ■



The **VLF-60** made by KEP is a very low frequency high potential tester that ensures efficient non-destructive testing and fault location on medium voltage cables. The VLF-60 is a portable unit perfect for field testing. The testing cycle is fully automatic,

followed with automatic discharging for safe operation. The VLF-60 features solid-type insulation, which makes it extremely easy to maintain. Compared to DC cable testing, which can be damaging to good insulation, VLF testing does not have such a detrimental effect on the cable being tested.

■ POWERFUL AC DC HIPOT TEST SET ■



The **HVTS-HP-Series** test sets are used for AC and DC high-voltage testing of objects with low to medium electric capacitance such as power cables and accessories, switchgear, busbars, and insulators. These powerful test systems feature

manual and automatic testing, automatic discharging, and an intuitive interface. Both the control and high voltage units are equipped with wheels for ease of transportation.

INSULATED RUBBER GOODS PROOF TESTING EQUIPMENT

■ RUBBER GOODS TESTERS ■



The **CBC-50M (CBC-100M)** is used for acceptance and maintenance testing of dielectric means of protection. The systems help to check the dielectric strength of insulated rubber gloves, dielectric rubber boots and overshoes, handheld tools with insulated handles (screwdrivers, nippers, pliers, etc.), voltage probes, and dielectric rods. The installation systems' equipment can also be used to test the insulation properties of cables, insulators, etc. with alternating current.



The **CBC-50C (CBC-100C)** is applied for acceptance and maintenance testing of dielectric means of protection, including safety gloves, safety boots, tools with insulated handles, and other live line tools utilized for personnel protection. The broader application of the CVC-50C (CBC-100C) system is AC testing of dielectric materials.

HIGH CURRENT TESTING AND DIAGNOSTICS

AUTOMATIC CIRCUIT BREAKER TESTERS

The circuit breaker testers **UPA** are used for automatic AC testing of circuit breakers, registering their tripping characteristics. Power regulation can be done either through a variac (RNO or VR) or through a built-in thyristor controller.

⚠ All metrological characteristics (current and time measurement) are valid if the variac RNO is used, i.e. if the exit signal waveform is stable.

■ CIRCUIT BREAKER TESTERS ■



UPA-1&UPA-3



UPA-6&UPA-10



UPA-16&UPA-20

Name	Range of test current		Power consumption, kVA	Weight (without flexible busbars), kg, max
	A	kA		
UPA-1	10 – 100	0,1 – 1	5.5	18
UPA-3	100 – 1000	1 – 3	5.5	18
UPA-6	100 – 999	1 – 6	33	47
UPA-10	100 – 999	1 – 9,99	55	47
UPA-16	200 – 4000	3 – 16	55	150
UPA-20	200 – 4000	3 – 20	55	150

OIL TESTING EQUIPMENT

■ TRANSFORMER OIL DIELECTRIC TESTERS ■



The **OLT-80 (OLT-100)** is designed for highly accurate breakdown voltage measurement. The testers feature fully automatic testing according to the selected standard, immediate switch-off at flashover, high safety level, internal non-volatile memory, and a printer. The testers are fully equipped and are ready for operation right after unpacking.



■ OIL TESTING CALIBRATORS ■

The **C-80 (C-100)** is used to calibrate insulating oil testers OLT-series. The C-80 (C-100) is installed in the oil tester as an oil vessel would be, simulating a load typical for dielectric oil testing. The output voltage of the oil tester is indicated on the digital display of the calibrator. IrDA interface for PC connectivity makes the calibrating procedure easy to document.

■ DISSIPATION FACTOR OIL TESTER ■



The **Tangent-3M** is used to measure transformer oil dielectric dissipation factor in accordance with IEC 60247 at a frequency of 50 Hz. The Tangent-3M can operate with six different measurement cells, parameters of which are saved in a non-volatile memory and are easily accessible from the device menu. All settings and 2000 last measurements are also stored in the internal memory.

KEP's Equipment for Reliable Power Testing

KEP produces high voltage testing equipment, including portable testing instruments and cable test vans, for various applications. As part of the KEP experience, we also provide:

- Guarantee and post-guarantee maintenance
- Guidance on using the equipment
- Software updates
- Device calibration