



Cable Test Vans **for Power Networks**



**Bringing a System
into the Testing and
Fault Location
of Power Networks**

sebaKMT



Bringing a system into cable testing and fault location

The rising demand for electrical energy increases the importance and priorities of uninterrupted service to the customer. Thus, faults in power distribution networks have to be quickly detected, located and repaired.

As market and innovation leaders we are the only producer of a series of cable test van systems for testing and fault location of power networks, satisfying all customer wishes.

We are the utility location specialists.

Cable testing and cable fault location of power networks

Testing

Insulation damage or faulty cable joints are recognised by DC cable testing or, in the case of PE and XLPE cables, through VLF 0.1 Hz Cosine-Square-Voltage.

Pre-location

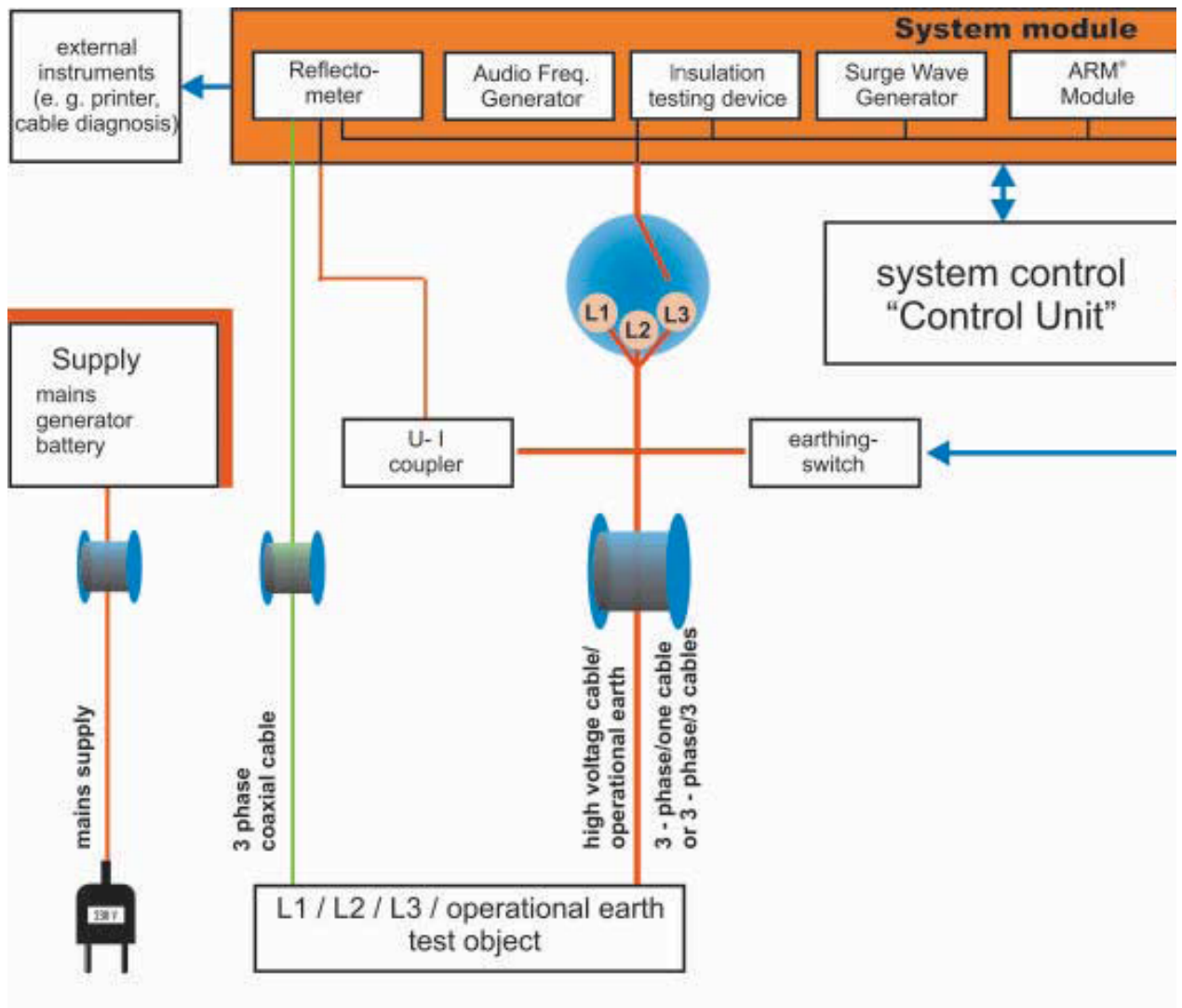
Low resistance faults, interruptions and short circuits can be located with reflectometers (TDRs). All HV pre-location methods use the TDR for the evaluation and visualisation.

Line location

To determine the cable path and cable depth.

Pin-pointing

To locate the precise position of the cable fault.





HV – fault location methods

ARM Plus®

ARM Plus® is a further advancement of the patented and state-of-the-art cable fault location method **ARM®** (Arc Reflection Method).

With **ARM Plus®** a stable arc with sufficient burning duration is ignited at the location of the fault with a double surge method. The fault location pulse is created by the discharge of a pulse capacitor and has a voltage of up to 1000 V. This very energetic pulse enables an improved fault location, especially in a long-distance-range.

The **ARM Plus®** method shows, simultaneously, the low-voltage trace as well as the fault trace in an automatic testing sequence on the monitor. The location of the fault is determined by the separating point of both traces, already known from the **ARM®** method.

Decay Plus®

Decay Plus® is a further development of the cable fault pre-location method **ARM Plus®**.

Decay Plus® enables the fault location on cables with extremely high ignition voltages (up to 80 kV) with excellent locating precision and clarity of the TDR traces.

The **Decay Plus®** method combines the advantages of the clear and precise **ARM Plus®** method with the availability of the highest ignition voltage provided by the systems test set, similar to the Decay method.

Active ARM®

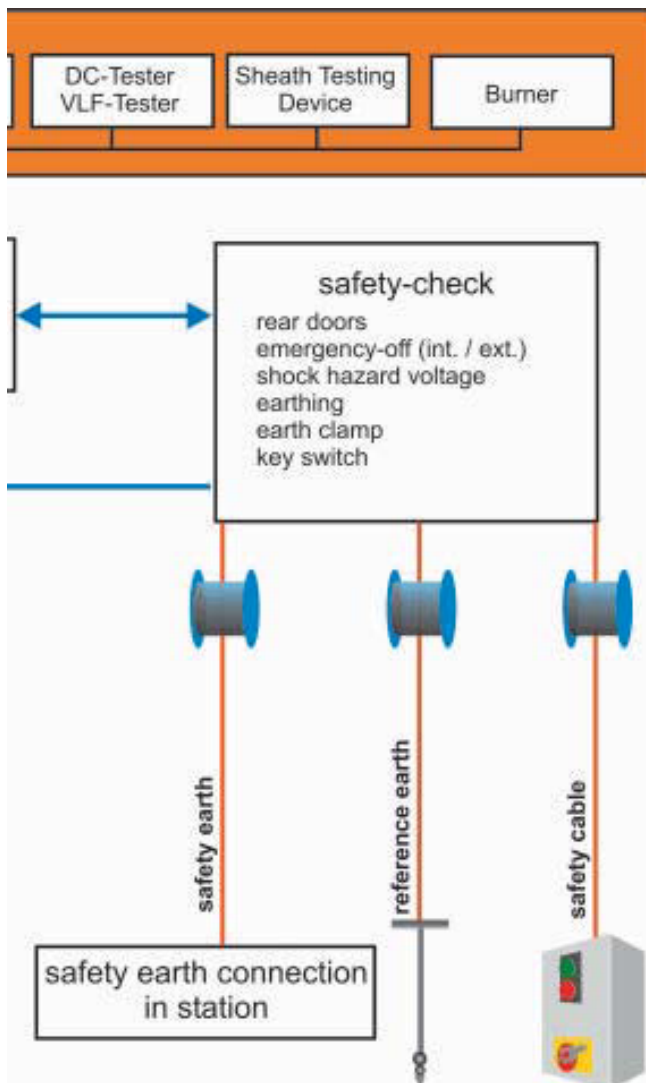
An optimized series impedance in the output circuit of the surge generator provides the full voltage of the surge generator at the fault location, to ignite the arc.

This concept uses two active sources for a controlled arc stabilisation with an extra 640 J source.

Safety

The safety of the user of electric systems is of utmost priority. The design of the test van systems and instruments take especially the safety issues very seriously.

- FI** - monitoring
- FU** - monitoring (potential monitoring)
- U(t)** - monitoring (potential monitoring)
- F Ohm** - monitoring (loop monitoring operational- / safety earth)
- FT** - monitoring (reference earth monitoring)



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PC aided test van systems

Hitec 2000

Three phase, computer aided measuring system for testing and fault location of power distribution cables in low and medium voltage networks

- system control via touch-screen
- DC-testing 0...70 kV with $I_n = 10 \text{ mA}$ / $I_{sc} = 100 \text{ mA}$
- 0.1 Hz Cosine Square VLF testing 0...54 kV_{eff}, test capacitance 5 μF
- fully automatic insulation measurement
- reflection measurement with TDR Teleflex M
- active ARM® with 0...2 / 4 / 8 / 16 / 32 kV (up to 1500 J)
- voltage decay up to 70 kV
- current impulse method up to 32 kV
- fault conversion and takeover burning up to 32 kV
- surge generator 0...2 / 4 / 8 / 16 / 32 kV (up to 2200 J)
- sheath fault pin-pointing at 0...5 kV
- audio frequency methods



Vario KMT

Three phase, computer aided measuring system for testing and fault location of Power distribution cables in low and medium voltage networks

- DC-testing 0...80 kV with $I_n = 2.8 \text{ mA}$ / $I_{sc} = 270 \text{ mA}$
- 0.1 Hz Cosine Square VLF testing 0...54 kV_{eff}, test capacitance 5 μF
- fully automatic insulation measurement
- reflection measurement with TDR Teleflex M
- ARM Plus® with 0...4 / 8 / 16 / 32 kV (up to 2560 J)
- Decay Plus® 30...80 kV
- current impulse method up to 32 kV
- fault conversion up to 80 kV
- surge generator 0...4 / 8 / 16 / 32 kV (up to 2560 J)
- sheath fault pin-pointing at 0...5 / 10 / 15 / 20 kV
- audio frequency methods



Compact System

Single phase, computer aided measuring system for testing and fault location of Power distribution cables in low and medium voltage networks

- DC-testing 0...32 kV with $I_n = 15 \text{ mA}$ / $I_{sc} = 300 \text{ mA}$
- optional 0...80 kV DC; 0...54 kV_{eff} VLF
- reflection measurement with integrated TDR
- ARM Plus® with 0...4 / 8 / 16 / 32 kV (up to 2560 J)
- voltage decay up to 80 kV
- current impulse method up to 32 kV
- fault conversion up to 8 kV
- surge generator 0...4 / 8 / 16 / 32 kV (up to 2560 J)
- sheath fault pin-pointing at 0...5 kV
- audio frequency methods
- optionally with OWTS system for PD-diagnosis and PD-fault location





Classic – test van with stand-alone units



R 30

Modular, three phase test van system for testing and fault location of power distribution cables in low and medium voltage networks

- DC-testing 0... 110 kV with $I_n = 2.8 \text{ mA}$ / $I_{sc} = 290 \text{ mA}$
- 0.1 Hz Cosine Square VLF testing 0... 54 kV_{eff}, test capacitance 5 μF
- fully automatic insulation measurement
- reflection measurement with TDR Teleflex M
- ARM® with 0... 12 / 50 kV (up to 2500 J)
- voltage decay up to 110 V
- current impulse method up to 50 kV
- fault conversion up to 110 kV
- surge generator 0... 3 / 6 / 12 / 25 / 50 kV (up to 2500 J)
- sheath fault pin-pointing at 0... 5 kV
- audio frequency methods



Classic

Modular, single or three phase test van system for testing and fault location of power distribution cables in low and medium voltage networks

- DC-testing 0... 70 kV with $I_n = 10 \text{ mA}$ / $I_{sc} = 100 \text{ mA}$
- 0.1 Hz Cosine Square VLF testing 0... 54 kV_{eff}, testing capacitance 5 μF
- fully automatic insulation measurement
- reflection measurement with TDR Teleflex M
- passive or active ARM® with 0... 8 / 16 / 32 kV
- voltage decay up to 70 kV
- current impulse method up to 32 kV
- fault conversion up to 10 kV
- surge generator 0... 8 / 16 / 32 kV (up to 2200 J)
- sheath fault location at 0... 5 kV
- audio frequency methods



UniSat

Small, universal testing and fault location unit for low and medium voltage networks

- DC- testing 0... 32 kV with $I_{sc} = 2 \text{ mA}$
- reflection measurement with TDR Kab 31-E / Teleflex T3050-S
- passive ARM® with 0... 8 / 16 / 32 kV
- voltage decay up to 32 kV
- current impulse method up to 32 kV
- fault conversion
- surge generator 0... 8 / 16 / 32 kV (up to 1750 J)
- sheath fault pin-pointing at 0... 5 kV
- audio frequency method



Portable fault location systems

Surgeflex 8

Test and fault location system for control and low voltage cables

- DC testing up to 8kV
- reflection measurement with Teleflex T3050-S
- ARM® measurement up to 8kV
- current impulse method up to 8kV
- surge generator 0... 2 / 4 / 8 kV (up to 1000 J)
- fault conversion
- audio frequency method (optional)



Surgeflex 15 und Surgeflex 25

Test and fault location system for control and low voltage cables

- DC testing 0... 15 kV or 25 kV
- reflection measurement with Teleflex T3050
- ARM® measurement up to 15 kV or 25 kV
- surge generator depending on model:
 - 0... 15 kV (up to 560 J)
 - 0... 7.5 / 15 kV (up to 1150 J)
 - 0... 12.5 / 25 kV (up to 1150 J)
- audio frequency methods (optional)
- battery and mains operated



Surgeflex 32

Test and fault location system for low and medium voltage cables

- DC testing 0... 32 kV
- reflection measurement with Teleflex T3050-S
- ARM® measurement up to 32 kV
- current impulse method up to 32 kV
- surge generator 0... 8 / 16 / 32 kV (up to 1750 J)
- fault conversion
- sheath fault location at 0... 5 kV
- audio frequency methods (optional)





Connection technology



Test van with three phase HV cable



Test van with 3 single phase HV cables

HV-connection technology

- Three phase HV cable (3 x 6 mm²) 80 kV at a length of 50 m. MC safety connector for the high voltage connections, motorised cable drum.
- 3 single phase HV cable 80 kV at a length of 50 m.
optional:
 - **Economy:** manual cable drum
 - **Comfort:** motorised cable drum
 - **Pro:** motorised mains slip ring cable drum

Supply

There are various alternative power supplies available:

- mains supply 230 V / 50 Hz
- battery feed with 2.5 kVA inverter, operation time > 4 hours
- separation transformer 5 kVA with 32 A, CEE connection
- generator up to 5 kVA in the engine compartment of the vehicle
- generator up to 7 kVA, connectable via auxiliary drive

LV-connection technology

50 m mains cable 2 x 4 mm²
50 m earthing cable 16 mm²
15 m FU – cable

optional:

- **Economy:** manual mains slip-ring cable drum
manual earthing cable drum
- **Comfort:** manual belt-drive, slip-ring mains cable drum
- **Pro:** motorised slip ring mains cable drum
and earth cable drum

Teleflex cable drum

50 m, 3 phase coaxial cable 50 Ω

Service

The entire product range of SebaKMT can be maintained at our service departments. The fastest way of obtaining spare parts is ordering them via the internet.

The close contact of our service personnel with the R&D departments in Baunach and Radeburg keep them abreast of all technological advancement.

Regular servicing of your test vans and instruments secures the constant availability of your technical instruments.



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One Company – Two Locations



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Product Range: Instruments and Test Vans for Fault Location in Power and Telecommunication Networks and for Leak Detection in Water and Sewage Networks • Cable and Pipe Locators • Seminars

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