



2021

CABLE DIAGNOSTIC TEST VAN HVT - 120D



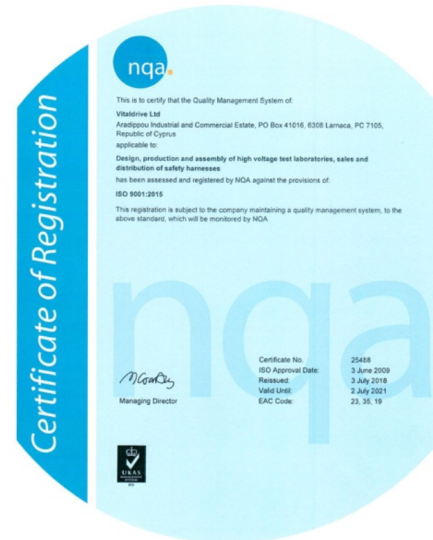
Larnaca, Cyprus

Cable Diagnostic Test Van

HVT-120D

The cable diagnostic test van HVT-120D performs the following functions:

1. *Very Low Frequency (VLF) AC voltage 0.1-0.01 Hz high voltage withstand test of power cables*
2. *DC high voltage withstand test of power cables*
3. *VLF partial discharge diagnosis measurements for power cables*
4. *VLF dissipation factor (tan delta) and power factor measurements for power cables*
5. *Burning down defective insulation of power cables*
6. *Pre-locating power cable faults by the pulse echo method (TDR), the arc reflection method, the impulse current method and the voltage decay method*
7. *Insulation Resistance Testing*
8. *Audio frequency cable route tracing and cable depth evaluation*
9. *Locating power cable faults by the acoustic and inductive methods*
10. *Isothermal relaxation current (IRC) and recovery voltage measurement (RVM) testing*
11. *Cable sheath testing and fault location*
12. *Earth ground testing*
13. *Cable phase identification measurements*



A. MAIN EQUIPMENT

1. Central Control Operating Unit

The Central Control Operating Unit is designed around the operator needs. Ergonomic, all tests and controls easily accessible, operator can perform with ease all the required tasks for cable testing and fault location while being in a comfortable working position. An industrial panel computer, installed into the control panel, is provided to interact with the installed testing units and to store data and to prepare reports that can also be exported to USB drives. The system integrates automatic check-safety features and monitoring of mains supply voltage is performed with over-voltage and under-voltage automatic protection features. A transparent separation wall allows the operator to have complete and continuous visibility of the technical area. The polished, practical and efficient design of the cable fault locating van guarantees efficient operation of all systems from every perspective.



*image for reference only

CABLE HIGH VOLTAGE TEST

2. AC VLF Hipot/Burner – VLF12011

A Hipot test (also called Dielectric Withstanding Voltage (DWV) test) verifies that the insulation of a product or component is sufficient to protect the operator from electrical shock. In a typical hi pot test, High Voltage is applied between a product's current-carrying conductors and its metallic shielding. The theory behind the test is that if a deliberate over-application of test voltage does not cause the insulation to break down, the product will be safe to use under normal operating conditions—hence the name, Dielectric Withstanding Voltage test.

The VLF-12011 is a continuously adjustable 0-120 kilovolt continuous duty AC hipot with a 0.1/0.05/0.02/0.01 Hz sinusoidal output. The waveshape is independent of capacitive loading and can test cables up to 15 km in length. The three piece design is suitable for test van withstand testing of 69KV cables and partial discharge and tandelta testing of 115 KV cables.



Controls are elementary: Power ON and Raise/Lower switches, HV ON and OFF, Fault Reset, and Start Timer pushbuttons, single range 120kV peak kilovoltmeter and 100mA peak charging current meter. In addition, a capacitance measurement circuit for pre-determining cable/load capacitance, a Hipot/Burn mode switch and a variac position meter are also included. While operating in **BURN** mode, the output is automatically current limited during a fault. When the fault occurs, the energy stored in the cable dumps across the fault while the VLF continues to provide burn current until the finish

of the half cycle (to the zero crossing). On the next half cycle, the process repeats itself. This repeated arc/burn cycling is very effective in quickly reducing high impedance faults to shorts, significantly reducing fault locating time.

Technical Specifications:

Input:	230V, 50/60Hz, 30A peak, 25A average
Output:	0-120 KVAC peak, 0.1/0.05/0.02/0.01 Hz
Duty:	Continuous
Load Rating:	0.55 μ F (approx. 1524 m of cable) @ 0.1 Hz 1.1 μ F (approx. 3048 m of cable) @ 0.05 Hz 2.75 μ F (approx. 7620 m of cable) @ 0.02 Hz 5.5 μ F (approx. 15240 m of cable) @ 0.02 Hz
Metering:	Voltmeter: 0-120 kVac peak Current Meter: 0-100 mA peak Load Capacitance: 0 – 6 microfarads User programmable test duration timer
Size and Weight:	Controls: 432 mm w x 280 mm d x 241 mm h, 9 kg Regulator: 508 mm w x 356 mm d x 686 mm h, 73 kg HV Tank: 660 mm w x 508 mm d x 559 mm h, 177 kg

Features:

- Simple and easy operation
- True sine-wave output/Highest load ratings available
- Waveform is independent of load capacitance
- Rugged and reliable design less prone to failure
- Much easier to service compared to units with solid state design

3. DC Hipot – PTS130

The PTS DC Test Set of CE marked products is a combination of high voltage DC proof and HiPot testers and HV Megohmmeters. Testing for dielectric strength and insulation resistance is now served with one instrument. The PTS is designed and constructed with field use in mind. It is rugged, reliable and contains all of the features needed for electrical maintenance testing of new or installed electrical apparatus.

Technical Specifications:

Input:	230V, 50/60Hz, 8 amps
HV Output:	0-130kVdc, 10mA Negative Polarity, Positive Ground
Duty:	Continuous
Voltmeter:	3.5", Scaled 0-70/150kVdc, \pm 2% F.S.
Currentmeter:	3.5", Scaled 0-1.0 μ Adc, \pm 2% F.S. with multipliers of x1, x10, x100, x1k, 10k Guard/Ground Load return
Megohmmeter:	Scaled 100-1MOhms, with



	multipliers of x0.1, x1, x10, x100, x1k
Dimensions:	356x279x356 mm – Control 318x305x457 mm – Tank
Weight:	15 kg – Control 37 kg – Tank

Features:

- Two range voltmeter and five range current meter
- Mohm readings at any output voltage
- 10 mA output current rating for fast charging
- Continuous duty operation
- Internal discharge resistors

CABLE FAULT LOCATION**4. Surge Generator, Fault Burner – CDS-3632**

A surge generator is used to inject a high voltage DC surge into the faulty cable. By supplying a sufficiently high voltage to the faulty cable, the open-circuit fault will break down creating a high-current arc. This high current arc makes a characteristic thumping sound at the exact location of the fault. To find the location of cable fault using the thumping method, a thumper is set to thump repeatedly and then walking along the cable route to hear the thumping sound. The higher the dc voltage applied, the louder will be the resulting thump.

To deliver the full joules of energy possible to a fault, the capacitors within a thumper must be charged to the maximum voltage. With the wrong thumper, this often results in thumping a cable at an excessive voltage, causing significant damage to insulation and accessories. Since the applied voltage is a square function ($\frac{1}{2} CV^2$), if the thumper is at $\frac{2}{3}$ voltage, only 45% of the joules are delivered to the fault. At half voltage only 25% energy is delivered, making the fault hard to hear. Either fault locating takes far longer than necessary or the crew gets impatient and turns the voltage all the way up to get the loudest bang. The fault is found but more are made. This practice can and should be avoided.

The CDS 3632 is a controlled energy fault locator/burner for testing and fault locating in primary cable systems. It is designed to provide constant energy at each of three different selectable output voltages. This controlled energy feature provides full energy at each output voltage tap, allowing the user to thump at a lower voltage with a higher energy while minimizing further cable damage. The measure of a good thumper is not the maximum voltage it can discharge, but the minimum voltage still capable of delivering the full energy.



Technical Specifications:

Input:	230V, 50/60Hz, 15 amps
Output Burn:	0-9/18/36kV
Current:	280/140/70 mA
Energy:	3200J at full output on all output taps
Polarity:	Negative output
Duty:	Continuous
Repetition rate:	6 to 10s, variable
TDR interface	ARC Reflection, Current Impulse and Voltage Decay
Voltmeter:	3.5", Scaled 0-40kVdc, $\pm 2\%$ F.S.
Current-meter:	3.5", $\pm 2\%$ F.S. Ranges: 0-500uA, 0-50mA, 0-500mA
Dimensions:	635x737x1130 mm
Weight:	204 kg

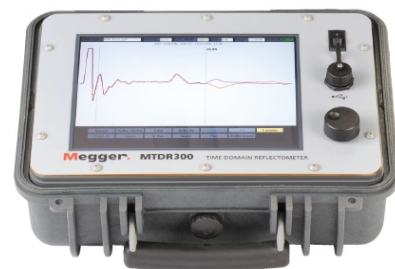
Features:

- Single piece combination Hipot, Burner and Surge Generator to support Fault Location on power cables
- Constant energy at each output voltage setting
- Adjustable thump (impulse) repetition rate, from 6 to 10 seconds
- Motorized output voltage tap switch
- Simplified Controls for minimal operator training
- Zero Start high voltage interlock
- Single pulse or continuous discharge modes

5. Digital Cable Radar – MTDR300

A Time Domain Reflectometer (TDR) sends a short-duration low energy signal at a high repetition rate into the cable. This signal reflects back from the point of change in impedance in the cable (such as a fault). The TDR measures the time taken by the signal to reflect back from the point of change in impedance (or the point of fault). The reflections are traced on a graphical display with amplitude on y-axis and the elapsed time on x-axis. The elapsed time is directly related to the distance to the fault location. If the injected signal encounters an open circuit (high impedance), it results in high amplitude upward deflection on the trace. While in case of a short-circuit fault, the trace will show a high amplitude negative deflection.

Since the low-voltage TDR is unable to identify high resistance ground faults, its effectiveness in finding underground cable faults is limited. To overcome this limitation the TDR is combined with the surge generator (thumper) and a filter, providing several methods of high voltage fault prelocation such as arc reflection, impulse current and voltage decay.



The MTDR300 is a 3-phase time domain reflectometer (TDR) designed to provide quick, effective, accurate and safe prelocation of cable faults in electrical networks. Operation of the instrument is via a single jog dial and intuitive menu system. The large color display further enhances operator comfort and aids rapid and accurate fault prelocation. The MTDR300 can be powered from its internal rechargeable battery or a main power supply. It's housed in a rugged, robust, field-proven case making it suitable for use in hostile or challenging environments.

Technical Specifications:

Input:	100 to 240 Vac 45-65 Hz
Ranges:	Auto and 10 ranges TDR 100 m to 55 km Transient 100 m to 220 km
TDR Pulse Widths:	Auto and 50, 100 and 500 ns, 1, 2,5 and 10 μ s
Sampling Rate:	100 Mhz
Cursors:	Dual independent control
Resolution:	<1m, depending on range and mode
Output Pulse Amplitude:	25 V into 50 Ohm
Gain:	60 dB in 5 dB steps
Input Impedance:	50 Ohm, 3 x TDR, 1 x arc reflection/transient method
Display:	Full XGA 1024 x 768 color
External Interface:	USB port
Dimensions:	305 mm x 194 mm x 360 mm
Weight:	14.7 kg

Features:

- 3-phase TDR operation
- Single jog dial operation
- Intuitive operator friendly menu system
- Auto-ranging find end cable
- Multiple fault location techniques
- Robust, rugged construction

PARTIAL DISCHARGE AND TAN DELTA TEST

6. HVT-D100

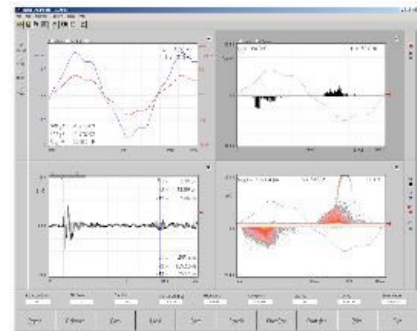
The HVT-D100 high voltage instrument offers inherent operator safety and greatly simplifies distribution class cable testing and other field tasks involving partial discharge and $\tan \delta$ testing. With the unique concept of the HVT-D100 the entire acquisition hardware is placed on high voltage potential right at the position where the signals are. Thus, no signal cables are needed, as the instrument is fully self-contained and battery operated. The instrument is fully remote controlled via high speed Bluetooth communication. Additionally, the self-contained HVT-D100 acquisition unit can be placed on top of any third-party coupling or reference capacitor. The TD function offers

Number ΦΠΑ (VAT) 10132211L

tan delta and power factor (PF) measurements. The PD function provides partial discharge measurements according to the IEC60270, whereas the PDL function includes partial discharge location for power cables. Finally, the TF covers a high voltage T-filter to sufficiently de-noise a high voltage supply for sensitive partial discharge measurements. The detachable Li-MH battery provides 10 hours of continuous operation, while a second battery is charged.

Technical Specifications:

Mains Supply	Battery operated
Power Requirements	Approx. 20VA
Operation	Remote controlled via software
PD Input Impedance	10 kΩ // 50 μF (PD) 50 Ω (PD LOC)
PD Input Sensitivity	< 200 μV
PD Lower Cut-Off (-6dB)	40,80 or 100 kHz
PD Upper Cut-Off (-6dB)	250, 600 or 800 kHz
PD A/D Converter	8 bit (+/- 7 bit)
PD location (TDR)	8 bit, 100 MS
Specimen Cable Length	10 to 5000m, for 80 μs & v _c =140m/ μs
Localization Precision	1m + 0.1% of the cable length
Voltage Measurement	16bit, 100MS
Voltage Values Displayed	U _{RMS} -value, U/√2-value, crest factor
Tan Delta Resolution	1 x 10 ⁻⁵
Tan Delta Precision	5 x 10 ⁻⁵
Synchronization	External on reference voltage
Synchronization Range	20Hz – 510 Hz (normal mode) 0.1 Hz, 0.05 Hz, 0.02 Hz (VLF)
Operation Temperature	0 – 55 °C
Interfaces	Bluetooth (921 kBit/s) Fiber optic serial link(921 kBit/s)
Size HVT-D	910mm h x 350mm w x 350mm l
Filter Unit	985mm h x 350mm w x 350mm l
Weight HVT-D	45 kg
Filter Unit	53 kg



B. ADDITIONAL EQUIPMENT

7. Super Directional Acoustic Detector S.D.A.D II

For pin-pointing of faults in buried cables the acoustic method is used to pin-point the exact fault location. The surge generator CDS-3632 is used in repetitive pulsing mode. High energy pulses which are released from the CDS-3632 force a voltage pulse to travel along the cable. At the fault the flashover happens. This causes a high acoustic signal that is locally audible. Depending on the pulse energy, the intensity of the acoustic signal varies. These noises are detected on the ground surface with the addition of the S.D.A.D II. The unit conveys more information about the fault location, and faster, with the addition of new microprocessor controlled electronics that provide bright, easier-to-see-and-read signals - day or night.



Features:

- Next generation high voltage fault pinpointing
- Touch screen color display
- Wireless microphone/headphones
- Full automatic operation
- Two earth probe microphones W/Wireless transmitters
- Two tri-pod's (for hard surfaces)
- A-T ballistic impulse detection system
- Direction to fault indication color touch screen LCD and super bright LED
- Stereo Bluetooth headphones
- Audio output limitation: automatic ear protection for operator, even if a microphone is dropped

8 Audio Frequency Cable Tracer Set IFL-1210

The IFL-1210 cable locator set is used for the successful location of the exact track and depth of different underground networks (cables and metallic pipelines). This lightweight user friendly instrument operates at multiple active frequencies and provides passive 50/60 Hz detection services as an excellent safety feature for identifying live underground utility cables. The IFL-1210 features a digital readout of the depth reading that helps to identify service depths prior to digging.

Technical Specifications:



TRANSMITTER

Operating Frequency :	200-10000 Hz
Modes of Generation :	Continuous, Intermittent, tri-band (three frequencies)
Permissible Load Resistance :	0 ... ∞
Specified Output Current:	
- Continuous and tri-band	0,1 ... 10 A
- Intermittent	0,1 ... 15 A
Max Output Power:	120 W (continuous) / 180 W (intermittent)
- Battery Operated	180 W (continuous) / 270 W (intermittent)
- External Battery Operated	180 W (continuous) / 270 W (intermittent)
Protection :	IP 54
Dimensions:	305 x 270 x 194 mm
Weight:	12 Kg



RECEIVER

Operating Frequency :	Active: 512, 1024, 1450, 8928, 9820 Hz Passive: 50/60 Hz, 100 Hz, 12-24 KHz
Max Depth Measurement :	Up to 10 m
Max Depth of Detection :	Up to 25 m
Max Distance of Detection :	Up to 5 Km
Continuous Operating Time:	Up to 50 h
Operating Temperature:	-40 ... +60 °C
Dimensions :	720 x 110 x 150 mm
Weight :	1,7 Kg

9. Insulation Resistance Tester C.A 6550



The CA6500 insulation tester with its site-proof casing is suitable to check equipment insulation during manufacturing, on-site installation work, periodic inspections and recommissioning of installations. It complies with the most recent recommended practices while taking into account future developments. The multiple test modes mean that you can both assess the insulation in qualitative terms by non-destructive testing and use samples to investigate insulation ageing problems for preventive maintenance purposes. The unit offers quick, effective checking of test execution by displaying the evolution of the test in progress in graphic form.

Technical Specifications:

Test Voltages	Ranges	500V: 10 kΩ to 2 TΩ 1000V: 10 kΩ to 4 TΩ 2500V: 10 kΩ to 10 TΩ 5000V: 10 kΩ to 15 TΩ 10000V: 10 kΩ to 25 TΩ
	Fixed Test Voltages	500, 1000, 2500, 5000, 10000
	Variable Test Voltages	40V – 10000V, 3 presettable voltage values
	Adjustment Increment for Variable Voltages	Variable:40-10KV Step: 40V-1KV:10V 1KV-10KV:100V
	Ramp Mode	3 presettable ramps: start voltage/end voltage/duration
	Ramp Configuration Range	40-1100V / 500-10000V
	Step Mode	Up to 10 steps (value and duration configurable for each step)
Voltage Measurement After Test		AC:0-2500V / DC: 0-4000V
Capacitance Measurement		0.001-9.999 μF / 10.00-49.99 μF
Leakage Current Measurement		0 – 8 mA
Discharge After Test		Yes / Automatic
Additional Test Stop Modes	I-limit	Programmable: 0.2-5mA
	Early-Break	di/dt
	Timer	Up to 99 minutes 59 seconds
Burning Mode	Burning	Constant testing

Ratio Calculation	PI, DAR, DD
Calculation of R at ref. T°	Yes
Measurement	3 filters with 3 possible time-constant
Display Filter	
Graphs on Display	R(t)+u(t);i(t);i(u)
Storage	256 recordings, 80000 points: R, U, I and date
Communication	Optically isolated port for USB and RS232 links
PC Software	Dataview
Power Supply	NiMH rechargeable batteries, 8x 1.2 V / 4,000 mAh, charging by external voltage: 90-260 V 50/60 Hz
Battery Charging	Battery charging possible while performing insulation measurements
Electrical Safety	1000 V CAT IV – IEC 61010-1 and IEC 61557
EMC, Mechanical Protection, Altitude	EN 61326-1, IP54, 3000m
Dimensions	340x300x200 mm (LxWxH)
Weight	6.2 kg

10. Cable Sheath Tester EG3000T

The cable sheath tester EG3000T is a complete system, employing the most effective fault location electronics, plus many features and operational convenience. The unit with its automatic cable-saving voltage control is used to locate all unshielded cable faults and sheath-to-ground faults. When pulsing a line to establish a fault, the tester applies only the breakdown voltage needed. Just as important, once the breakdown or flash to ground is achieved, the voltage is automatically reduced to the minimum amount needed to keep the fault alive and the fault current is increased. Up to 2.2 amps is available to locate through asphalt and concrete or dry sand and soil.



- Faults up to 20 Meg Ohm
- Over 2 amps of current available
- Automatic voltage control
- Up to 3 kV output
- Operates from 230V source, 12V external source, or 12V 7Ah rechargeable internal battery
- Prevents cable and insulation damage
- Proof tests cables before returned to service

11. Cable Phase Identification System SPI

SPI-III's unique design consists of a wireless bi-module combo that is stunningly easy to configure and operate. With many advancements and innovations, SPI-III will be more helpful than ever before, enabling field applications such as identification of A-B-C electrical phases from all 50 and 60 Hz networks, switchgear phase concordance (matching), phase rotation, system paralleling, underground phasing applications and more. SPI-III performs like no others thanks to its top of the line software and hardware integration. The philosophy behind its years of development is to create a rugged tool made for field that you can count on anytime. The mobile unit allows the user to positively identify the phases on any area of an overhead or underground network, no matter the physical distance separating it from the reference module.

Technical Specifications:



Phasing Resolution:	± 1°
Wireless Range:	Main Field unit and wireless display unit: 45 ft or 14 meters
SPI-III Reference unit:	Ethernet port, Power input External GPS connection interface, 50/60 Hz
SPI-III-Field Unit:	Autonomy: 30 hours of continuous phasing, Up to 72 KV direct contact suing hotstick, Non-contact up to 800 KV, Capacitive test port input, IP-67 rating, 50/60 Hz

12. Monitoring Device for Insulation Condition Monitoring and Remaining Insulation Life Assessment AC-Tester

The monitoring device tester is used for high voltage equipment insulation condition assessment off-line. The unit utilizes three different diagnostic methods for insulation absorption parameter evaluation: the absorption factor analysis and polarization factor analysis, the reflected voltage measuring (RVManalyze) and the isothermal relaxation current method (IRC).



Technical Specifications:

Measuring Channels:	3 phases
PC connection:	USB
Battery time:	6 hours
Dimensions:	450 x 520 x 230 mm
Weight:	12 kg

13. Earth Ground Resistance Meter 1623-2

The Earth Ground Tester performs all four ground tests quickly and accurately. The earth ground tester measures earth ground loop resistances using only clamps, only stakes, or one clamp and stakes. With the stakeless test method, the unit is able to measure earth ground loop resistances for multi-grounded systems using only current clamps. This technique eliminates the dangerous, and time consuming job of disconnecting parallel grounds, and finding suitable locations for auxiliary ground stakes.



Technical Specifications:

Display 1999 Digit LCD:	Display with special symbols, digit height 25 mm, fluorescent backlight
User Interface:	Instant measurement through TURN and START one button concept. The only operating elements are rotary switch and START button
Memory:	Internal memory storage up to 1500 records accessible via USB port
Temperature Coefficient:	±0.1% of reading
External Voltage:	V ext, max = 24 V (DC, AC < 400 Hz), measurement inhibited for higher values
V ext Rejection:	> 120 dB (162/3, 50, 60, 400 Hz)
Measuring Time:	Typical 6 seconds
Battery Life Span:	Typical > 3,000 measurements
Dimensions:	250 x 133 x 187 mm
Weight:	7.6 kg incl. accessories

14. Digital Multimeter 83V

The digital multimeter 83V has improved measurement functions, trouble-shooting features, resolution and accuracy to solve more problems on motor drives, in plant automation, power distribution and electro-mechanical equipment. The units are independently tested to comply with the 2nd edition of ANSI/ISA S82.01 and EN61010-1 CAT IV 600V/CAT III 1000V.



Technical Specifications:

Voltage DC:	Maximum Voltage: 1000V Accuracy: $\pm(0.1\%+1)$ Maximum Resolution: 100 μ V
Voltage AC:	Maximum Voltage: 1000V Accuracy: $\pm(0.5\%+2)$ AC Bandwidth: 5kHz Maximum Resolution: 0.1 mV
Current DC:	Maximum Amps: 10A(20 A for 30 seconds maximum) Amps Accuracy: $\pm(0.4\%+2)$ Maximum Resolution: 0.01 mA
Current AC:	Maximum Amps: 10A(20 A for 30 seconds maximum) Amps Accuracy: $\pm(1.2\%+2)$ Maximum Resolution: 0.01 mA
Resistance:	Maximum Resistance: 50 M Ω
Capacitance:	Maximum Capacitance: 9,999 μ F
Frequency:	Maximum Frequency: 200 kHz

C. CONNECTING DEVICES

15. Main HV Switch



The main high voltage switch along with the control panel form the heart of the testing process of the cable test van. The unit is air-insulated with a reliable and robust design. The switch once it receives power through the control panel it selects and gets locked to a particular high voltage instrument. Once the test is completed the unit automatically connects to ground making the operation of the test van safe.

16. Cable Drum Racks

External connections for the cable diagnostic test van are provided with power feeding cable drum, grounding cable drum and a high voltage cable drum



- Drum with main power cable, cable length 50 m
- Drum with grounding cable with a cross-section 25 mm² copper transparent plastic sheath with connection every 4 to 5 m, cable length 50 m
- Drum with output HV shielded cable, cable length 50 m
- Drum with auxiliary ground cable, cable length 15 m

D. ELECTRICAL SAFETY SYSTEM

17. Electrical Safety Check System

The electrical safety system provides protection to the operating personnel as follows:

- monitoring the potential on the car (switching off if the potential is higher than 24V)
- monitoring the earth resistance (switching off if the resistance is higher than 25 Ohm)
- monitoring the door of the high voltage compartment (switching off the equipment if doors are opened)
- Emergency Switch to shut down the equipment in case of hazard
- Visible break load switch
- Beacon and warning siren



E. PROTECTIVE EQUIPMENT

18. Voltage Detector

Voltage Detectors are used to verify live or de-energized conductors. These testers may be used with rubber insulating gloves or hot sticks using the splined universal end fitting. Testers indicate the presence of voltage with an extra bright LED light and a distinctive audible signal. It is recommended that the tester be moved closer to conductor until warning is indicated, or it touches conductor, apparatus, or test point. Test the unit on a nearby energized conductor.



19. Personnel Protective Equipment / Tool Kit

1	Ground pole / Insulating stick	1 unit
2	Hot stick	1 unit
3	Dielectric gloves	2 pair
4	Dielectric boots	1 pair
5	Protective helmet	2 units
6	Tool Kit	1 unit
7	Fire extinguishers	2 units
8	Reflecting triangle	1 unit
9	Ground spike / hammer	1 unit
10	Flood lights	2 units
11	Cable route measuring wheel	1 unit

F. AUXILIARY GENERATOR

20. DYNAWATT PTO-driven generator set

PTO-driven generator sets are always the first choice when there is a very strong demand on reliable power generation in a vehicle without affecting working or loading space. The generator is equipped with two bearings, integrated electronic control unit and switch-on box. Dynawatt underfloor generator system makes use of the vehicle's existing motor as its drive system. Since today's vehicles are equipped with state-of-the-art fuel injection systems and exhaust emission control systems for capacity and environmental reasons, using a stationary vehicle's engine to drive the generator has definite advantages over a power unit as regards fuel consumption, exhaust emission and noise pollution.



Dynawatt underfloor generators are mounted under the chassis of the vehicle, leaving the stowage compartment free for its real purpose of stowing goods that require transportation.

G. VEHICLE

21. Chassis: Mercedes Sprinter



High performer and workhorse – the new Sprinter is more than a vehicle: it's a true partner you can always rely on to support you all the way when there's a job to be done. As the van that established a whole vehicle segment, the Sprinter has been ahead of the crowd since 1995. It is known above all for its outstanding operational reliability which gives users the freedom to concentrate fully on their business activities. The latest generation of the Sprinter lives up to this impressive reputation. It is the result of the process of continuous development with which we ensure that the Sprinter always offers the best in terms of reliability, quality, safety, flexibility, cost effectiveness, sustainability and service.

22. Vehicle Body Work



View of the Operator area

*Image for reference only

The test van is designed to be easy to operate and service. It is equipped with high quality insulated wall panelling and air conditioning. The body is divided into technical and operator compartments separated by a partition wall. The technical compartment includes all the necessary tools and equipment

For letter:
P.O. Box 41016
6308Larnaca,
Cyprus

Phone:+35724821788
Fax: + 357 24821787

E-mail: saleshvt@vitaldrive.net
Website: www.vitaldrive.net



Number ΦΠΑ (VAT) 10132211L

for carrying out testing and inspections. Safety is an important feature of the test vans and hence all equipment is properly mounted and secured for transit. The operator compartment provides a pleasant environment to work in with more room and plenty of storage. It is equipped with cabinetry and workbenches that increase the operators' efficiency and productivity.



View of the Technical area

*Image for reference only

Features:

- Roof mounted air conditioner
- Internal lighting 220 VAC & 12V DC
- Insulated walls and roof for thermal and noise
- Special antistatic floor in operator area
- Special aluminium tread plate suitable for rough loading in high voltage area
- Partition wall, Operating desk & Swivel chair
- Drawers for storage of accessories

For letter:
P.O. Box 41016
6308Larnaca,
Cyprus

Phone:+35724821788
Fax: + 357 24821787

E-mail: saleshvt@vitaldrive.net
Website: www.vitaldrive.net



H. DOCUMENTATION

23. Included one full set of laboratory documentation.

I. TRAINING

24. Full training is provided for the test van personnel. The training includes the full use of the equipment and covers the basic test van operations such as safety management, routine and preventative maintenance of equipment.

Managing Module

High Voltage Area

1-st Group

2-nd Group



J. WARRANTY

25. Our test vans are covered by a warranty for a period of one (1) year. At the end of this period, the manufacturer can provide upon order an after-sales service of the equipment.

K. CONTACT INFORMATION

Tel.: +357 24821788; Fax: +357 24821787

E-mail: salesVD@vitaldrive.net

For letter: P.O.Box 41016, Larnaca 6308, Cyprus

Factory: Aradippou Industrial and Commercial Estate 7100, Larnaca, Cyprus www.vitaldrive.net

Dr. Vladimir Gnatko
President & CEO