

Instruction Manual

40 kV Test Set T 99/1

FOREWORD

ADVICE FROM MEGGER

These Operating Instruction are intended to help you solve any questions and problems as fast and easily as possible. Please start with reading the manual whenever some problem should arise.

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For any damage resulting from a violation of their duty to repair or re-supply items, Megger can be made liable only in case of severe negligence or intention. Any liability for slight negligence is disclaimed.

EC-Declaration of conformity
CE Mark

We, the company

Hagenuk KMT
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declare in our responsibility, that the product

40 kV Test Set T 99/1

is in conformity with the regulations of the Council of European Community for equalization of the rule and regulation of the member states about electromagnetic compatibility.(EMC-regulation 89/336/EWG).

This EC- declaration of conformity is the result of tests conducted by the quality assurance department of Hagenuk KMT Kabelmeßtechnik GmbH according to article 10 of the regulation and in accordance with the basic standards EN 50081-2 radio emission, EN 50082-2 Distortion resistivity, the product standard EN 55011 and the basic standard EN 60801-2 Electrostatical discharges and IEC 1000-4-4 fast transient disturbances.



Radeburg, 13th of Juli 2003

Dr.Iann
Manging Director

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CHAPTER 1

SAFETY INSTRUCTIONS

1. SAFETY INSTRUCTIONS

All persons involved in the installation, operation, maintenance and repair of this system must have read this user manual carefully.

The instrument and all additional equipment are in accordance with the current state of safety technology at the time of delivery. Owing to the work processes involved, however, there may be parts of the instrument and its peripherals which cannot be given optimum protection without an unreasonable reduction in function and usability. Good personal safety practice is therefore indispensable in terms of the protection of staff and the instrument.

The following safety instructions must be complied with.

General instructions

Work on this instrument and its peripherals must only be performed by qualified and/or trained staff. Other persons must be kept away.

This user manual must be available for the supervisory, operating and maintenance staff to refer to.

Improper use may endanger life and limb, the system and connected equipment, as well as the efficient functioning of the system (accident prevention regulations). The instrument may only be used for the purpose for which it is intended by the manufacturer.

Always use correct tools in perfect condition for all work.

Regular checks must be made to ensure that the relevant safety regulations are being complied with during operation and maintenance.

The instrument may only be operated by authorised persons with the appropriate skills.

Only operate the system if it is in technically perfect condition.

No non-original parts may be used for the instrument and its peripherals, as the necessary safety will not otherwise be guaranteed. No mode of working which detracts from the safety of the instrument must be used.

The user is under an obligation to report any changes in the system to the supervisor responsible without delay.

The user is under an obligation to shut down the instrument immediately in the event of an instrument malfunction which detracts from the safety of staff. The instrument may only be put back into operation once the malfunction has been rectified.

Electrotechnical instructions

The instrument and all additional equipment must be connected properly. The relevant **EN**, **DIN** and **VDE** regulations must be complied with.

Repair and maintenance work must only be carried out when the system is switched off (dead) and then only by a skilled electrician in accordance with current accident prevention regulations (APR). A skilled electrician in the sense of the accident prevention regulations is a person who can assess the work assigned to him/her and recognise possible dangers on the basis of his/her technical training, knowledge and experience, and of his/her knowledge of the relevant regulations.

1.1. General rules for working with high voltages

Working with high-voltage devices and systems demands special care.

This is particularly true of mobile operation, i.e. if the accommodation in question and its equipment do not ensure safety with permanent safety devices from the outset.

Regulation DIN VDE 0104 "Installation and operation of electrical test systems" must be complied with to the letter.

This clearly instructs:

- that high-voltage installations must only be operated in properly secured rooms or behind corresponding barriers, and safety devices must not be circumvented or put out of operation.
- that at least two persons must be present during operation, with one person being able to activate the emergency-off circuit in the event of an emergency.

1.1.1. Supplementary instructions

The following supplementary instructions are not taken directly from the regulations.

- To avoid dangerous charges, all metal parts in the vicinity of a high-voltage system must be grounded. Special care is required in the case of mobile operation in this respect.
- Do not disconnect while live (risk of arcs).
- High-voltage test and burn equipment is short-circuit proof. This means that there is a danger that the voltage will run up when a short circuit is removed.
- Connect a discharger parallel to the measuring equipment in the case of short-circuit current measurements (e.g. 90 V corona discharger).
- Only ever touch component parts which have been live and read measuring/test devices if they are visibly grounded and short-circuited, even if they have been switched off and discharged properly.

1.1.2. Danger of recurring voltage from space charges

- Only remove grounding and short-circuit when the test object is to be put into operation again.
- Cables which are not in operation are capacitors. Ground and short-circuit as a matter of principle.

1.2. Indications used in the description

Important instructions concerning personal protection, work safety and technical safety are indicated as follows:

WARNING: Warning indicates work and operating procedures which must be complied with in full to exclude the possibility of persons being put at risk. This includes instructions concerning particular dangers when handling the instrument.

ATTENTION: Attention indicates work and operating procedures which must be complied with in full to prevent the instrument/peripherals from being damaged or destroyed.

N.B.: N.B. indicates special technical requirements to which the user must pay particular attention when using the instrument.

CHAPTER 2

TECHNICAL DESCRIPTION

2. TECHNICAL DESCRIPTION

2.1. Specification

No-load voltage	40 kV
Short-circuit current	approx. 15 mA
Overcurrent tripping	at 2 mA (switched)
Current at 40 kV	2.5 mA
Power supply	Mains 230 VAC +5 % -10 % External battery 12 VDC
Power consumption	approx. 220 VA
Max. discharge capacitance	10 mF
Dimensions	260 mm x 160 mm x 400 mm (approx. 10¼" x 6¼" x 15¾")
Weight	approx. 15 kg (33 lbs)

Subject to changes and alterations without further notice

2.2. Scope of supply and accessories

2.2.1. Scope of supply T 99/1 40 kV test set

40 kV test set T 99/1, Order no. 2502429, consisting of:

Quantity	Description	Type	Code no.
1	40 kV test set	T 99/1	2462125
1	Mains lead 2,5 m	0336	2480972
1	Ground cable (2,5 m, 25 mm ²) 3020641		0313
1	Ground terminal for cable sheath	0403	2480646
1	HV connecting cable (3 m)	K 705	3020636
1	Terminal	L 909	3020646

2.2.2. Accessories

Battery lead L 501 (10 m, 2x4 mm²), Order no. 3020635

Accessories case 0890, Order no. 2480883

2.3. General functional description

The T 99/1 40 kV test set has been specially developed for testing power cable systems with a standardized rated voltage of 10 kV in accordance with VDE Regulations 0255 (new: VDE 0276-621), and the provisions of Regulation 0472, paragraph 508.

However, it is also suitable for all other voltage testing and insulation resistance measurement up to 40 kV.

Power distribution systems with a standardized rated voltage of 10 kV are becoming ever more popular in inner cities, as they enable the space required for switchgear and substations to be greatly reduced. This, however, has impaired the accessibility of such installations, with it becoming increasingly difficult to get test and measuring equipment to the cable sealing end.

Compared with other equipment, the 40 kV test set offers major advantages in terms of size, weight and specifications.

Even in the case of underground substations which can only be reached through manholes, one person can carry the test set to the sealing end and operate it there without difficulty; if, in the case of new installations, for example, a low-voltage supply is not available, the test set can always be run off a 12 V car battery.

This does not mean that features designed to facilitate testing and protect the operator have been neglected, however.

The test set is equipped with a switch-on interlock system, overcurrent shutdown, a discharge device and a time switch, not to mention voltage stabilization and electronic current limiting circuitry.

2.4. Description of the T 99/1 40 kV test set

2.4.1. Performance features

- low weight
- voltage infinitely variable up to 40 kV
- current measurement in three ranges: 200 mA, 2 mA, 20 mA
- battery and mains operation
- built-in discharge device
- built-in time switch, adjustable from 0 to 60 min.
- stabilized output voltage
- overcurrent trip
- automatic discharge

2.4.2. Design and working method

The high-voltage generator of the test set is a transistor-controlled relaxation-type converter with an input voltage of 12 V and an output voltage of 10 kV. This voltage is stepped up to the output voltage of 40 kV by a multi-stage voltage multiplier cascade.

The 12 V source is provided either by the built-in power supply unit, which transforms the mains voltage of 115/230 V into 12 VDC, or a 12 V battery (preferably a car battery).

The dynamic behaviour of the relaxation-type converter and cascades is in accordance with a constant power characteristic. That means that the current and voltage response within a wide range is such that constant power is supplied to the load resistor (leakage resistance) independently of its size.

This is the ideal response for a pure burning set. In the case of a test set, this current-voltage characteristic has to be corrected for the particular type of application.

A test set must maintain the set test voltage within the usual range of leakage currents, i.e. a few milliamperes, to avoid having to make continuous readjustments in the event of variations in current and mains voltage.

The voltage stabilization takes care of this. A feedback signal derived from the output voltage influences the duty cycle of the relaxation-type converter.

The constant voltage range is followed by the constant power range, with voltage and current being regulated in such a way that the full power available to the test set is applied to the test object.

This range is passed through quickly during charging. The test set is able to charge 1 mF to 40 kV in 10 s. This range is followed by the constant current range. The task here is to supply a current which makes it possible to burn down a fault with a flashover voltage of 10 kV. Experience shows that 10...20 mA is sufficient to do this.

A powerful burn unit such as the T 22/13 B can then be used for burning out. The current control has been set to approx. 15 mA out of consideration for the rectifiers used.

This applies to the 20 mA setting of the current measurement range switch. In the 200 μ A and 2 mA ranges the control limits the current to the measuring range end values, with them only be exceeded momentarily when flashover occurs, at which point the overcurrent trip comes into effect.

Fig. 1 shows the current-voltage characteristic for the test set.

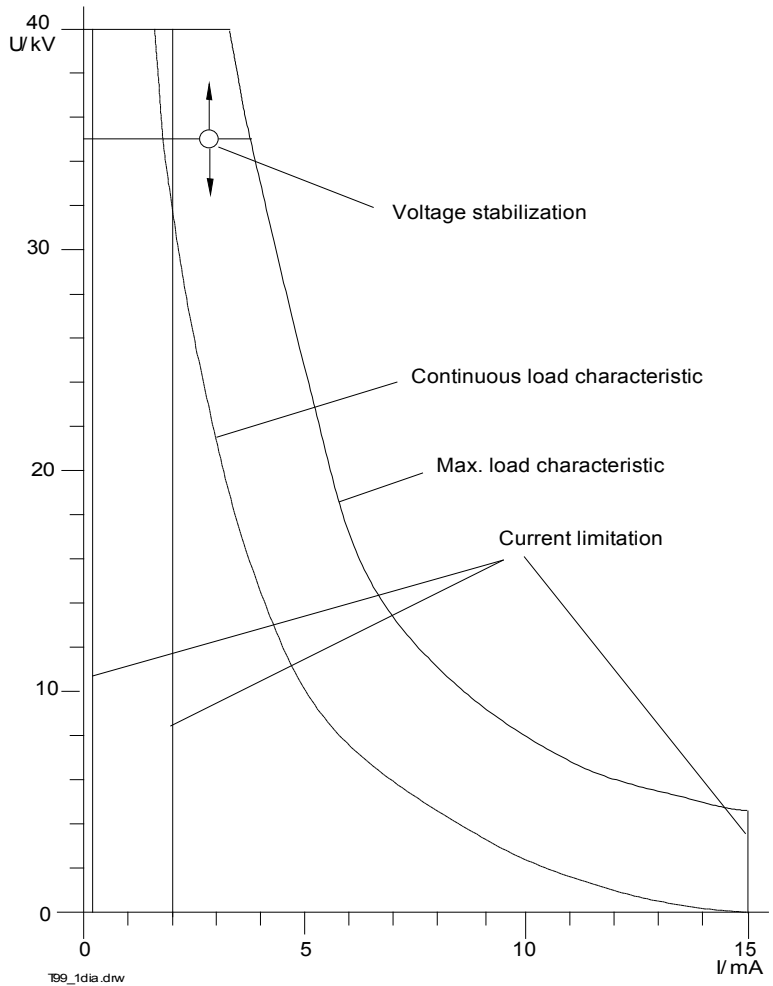


Fig. 1 Current-voltage characteristic, T 99/1

The technology described provides an extremely constant voltage during testing, yet also allows quick charging. In addition, it is possible to perform pre-burning and prelocation with the T 01/6 Teleflex using the decay method, with the power consumption remaining of an order of magnitude which also permits extended operation off the external battery.


The output current and output voltage are displayed on separate instruments to make it easier to determine the insulation resistance.

The voltmeter has a full-scale deflection of 40 kV.

The ammeter has three ranges with full-scale deflections of 200 mA, 2 mA and 20 mA.

The test set has the following features to facilitate measurement and protect the operator:

a) Switch-on interlock system

The high voltage cannot be switched on by pressing the "On" button until the voltage adjustment potentiometer has been turned as far anticlockwise as it will go (zero setting). 

b) Discharge device

When the unit is shut down by the time switch and when the "Discharge" button is pressed, the test object is discharged by a discharge device. The max. discharge energy is 8 kJ, corresponding to 10 mF at 40 kV. The "Discharge" switch allows the operator to activate the discharge device and switch off the high-voltage generator without disabling the control and measurement electronics, retaining the voltage indication and thereby ensuring the safety of the operator. This function is also retained if the test set shuts down automatically.

c) Overcurrent tripping

If the current exceeds the measuring range end value, e.g. by approx. 10% in the 2 mA range, the high voltage shuts down. To make it possible to also detect momentary flashovers which do not lead to full discharge of the test object, the test set does not cause a discharge in the event of overcurrent tripping.

d) Time switch

A test time of up to one hour can be preselected using a time switch. When the time expires, the high voltage shuts down and the test object is discharged.

e) Reverse voltage protection during battery operation

If a battery is connected with wrong polarity, a protective diode prevents current from flowing. The test set will not be damaged. Operation with 230 VAC and 12 VDC connected simultaneously must be avoided at all costs.

f) Travelling-wave protection

The cascade vessel houses a resistor for travelling-wave protection which protects the test set when a flashover occurs in the cable.

CHAPTER 3
OPERATION

3. OPERATION

3.1. Safety measures

The following safety measures must be complied with to avoid personal injury or material damage as a direct result of operation of the T 99/1 by itself or in combination with other equipment:

- Check the immediate area surrounding where the T 99/1 is being used for any unprotected live equipment/plant components with which you or the unit might unintentionally come into contact. In particular, this applies to **high-voltage** components (>25 VAC / >60 VDC) and components with an unknown voltage.

Protect such components by fitting insulating covers. If this is not possible for technical reasons, switch such components off or have this done for you for the duration of your work at this site by prior agreement with/with the prior approval of the supervisor responsible. Make sure that this has been done properly (e.g. by performing control measurements with a multimeter which you have checked for proper functioning before taking measurements: perform a control measurement on a known voltage, etc.).

Perform a control measurement, e.g. with a multimeter. Before doing so, make sure that the test meter is working properly, e.g. by performing a control measurement on a known voltage.

- Choose a site for the unit that satisfies weight and dimension requirements and provides a secure "base".
- Make sure that the proper functioning of other equipment/plant components is not impaired by the installation of the T 99/1. If other equipment/plant components have to be modified to accommodate the installation and operation of the generator, make sure that such measures are reversed once the work has been completed. The special requirements of such equipment/plant must be complied with, and only perform work in this connection **by prior agreement with/with the prior approval of** the supervisor responsible.

This is particularly important in the case of interference with existing safety devices.

3.2. Controls

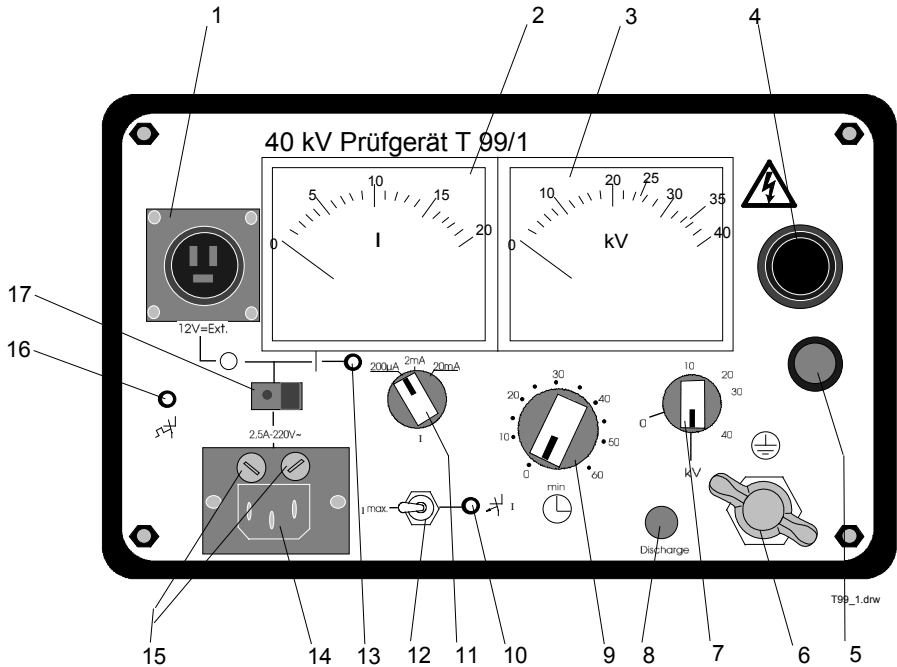


Fig. 2 Front view

- | | |
|----------------------------------|-----------------------------------|
| 1 Jack for battery | 10 Overcurrent lamp |
| 2 Amperemeter | 11 Current measuring range switch |
| 3 Voltmeter | 12 Overcurrent trip "On" |
| 4 Socket for HV connecting cable | 13 Mains/battery "On" lamp |
| 5 High voltage "On" button | 14 Mains jack |
| 6 Protective ground terminal | 15 Mains fuses |
| 7 Voltage control | 16 "Overload" lamp |
| 8 Discharge button | 17 "On/Off" switch |
| 9 Time switch | |

3.3. Start-up

CAUTION: Please note that all safety regulations concerning the use of high-voltage equipment must be complied with when the test set is started up.
(see section 1.1.)

3.3.1. Preparing for a measurement

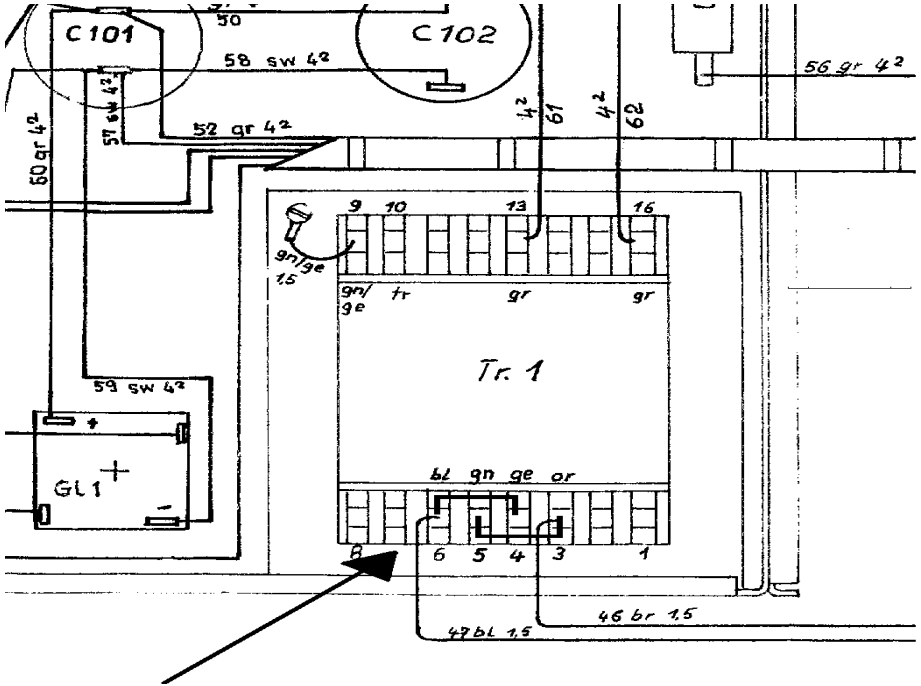
Power supply

The test set can be run off either the 115/230 V / 50-60 Hz AC mains or a 12 V battery. It is wired for 230 V when supplied and can be changed over to 115 V by resoldering jumpers on the transformer (see fig. 3).

NB: Fuses will have to be replaced if the test set is rewired for 115 V operation (see fig. 4).

In the case of mains operation, jack (14) must be connected to the mains with the 0336 mains lead.

In the case of battery operation, the battery (preferably a 12 V car battery) must be connected to the battery jack (1) with the battery lead.



Soldering jumpers for 115 V operation

Fig. 3 Rewiring for 115 V

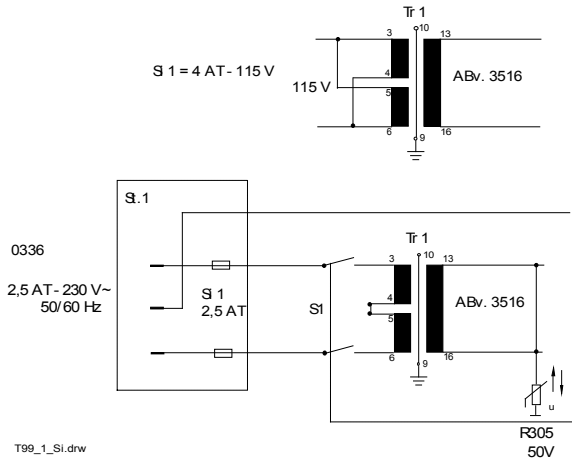


Fig. 4 Replacement of fuses for 115 V operation

3.3.2. Testing the test set for correct functioning

The cascades for high-voltage generation are housed in a vessel filled with the insulating gas sulphur hexafluoride (SF6). The operating pressure is 0.1 bar.

The gas vessel contains a protective spark gap which is activated in the event of a gas leak or poor insulating ability on the part of the gas before a component is put at risk.

If the test set has been idle for an extended period, it should be run up to maximum voltage (40 kV) with the high-voltage plug disconnected to check the quality of the insulating gas. The current measuring range should be set to 200 mA and the overcurrent trip switched on.

If the high voltage shuts down while the test set is being run up, the protective spark gap has been activated.

In the worst case, the gas will then have to be replaced.

To do this, the test set has to be opened. Connect the H 909 filling device to the filler valve visible on the cascade vessel and top the vessel up with SF6 from a gas bottle. Position the test set in such a way that the filler valve is at the highest point of the vessel.

Now fill the vessel to 0.1 bar positive pressure and then reduce to atmospheric pressure. Repeat this process at least 10 times. Finally, check the dielectric strength again.

The test set can always be operated below the threshold voltage of the protective spark gap and cable testing performed. The protective spark gap may also be activated during cable testing.

If this happens, the cable capacitance is discharged via the spark gap and discharge resistor.

3.3.3. Connecting the test object

First of all, before the test object as such is connected, the protective ground connection has to be established. This is done using the 0313 protective ground cable, one end of which should be connected to the wing screw (6) and the other end to a frame ground with a low-impedance ground connection.

A low impedance connection must also be established between the protective ground and the station ground (cable sheath).

The K 705 high-voltage connecting cable must only be connected if the test object is dead and grounded. Disconnection from ground is the last step before starting testing, and reconnection to is the first step before disconnecting the test object.

WARNING: Terminals which are not grounded must not be touched even with the test set switched off (recharging). The station ground connection must be established before the high-voltage connection.

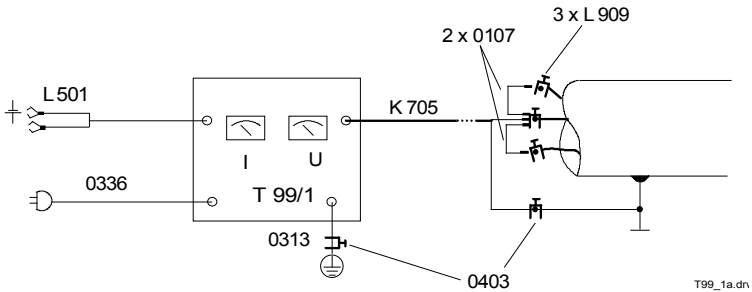


Fig. 5 Connection

If only one connection to ground is available, the protective and station grounds may both be connected to it, but using separate cables and separate terminals, and as far from each other as possible, making sure that the station ground connection is closer to the cable sheath.

3.3.4. Performing measurements

- Switch the test set on using the toggle switch (17).
 - Lamp (13) lights up

- Switch the high voltage on with button (5)
Only possible if the voltage control (7) has been turned as far anticlockwise as it will go.
 - Lamp in button (5) lights up

- Turn the current measuring range switch (11) to the measuring range which corresponds to the current with which the test object is to be charged. Set the time switch (9) to the required test time.

Switch (11) simultaneously switches to the current measuring range and the maximum current that the current limiting circuitry will allow. In the first two switch positions the maximum value is approx. 120% of the measuring range end value. In the 20 mA range it is approx. 15 mA.

For charging with maximum current, set the switch to 20 mA as in the case of burning and decay measurements.

- Set the required voltage roughly using the voltage control (7).
Watch the voltmeter (3) carefully during charging. If necessary, correct the voltage control (7) before the required test voltage is reached.


- Once charging has been completed, set the current measuring range switch (11) to the required measuring range.

- When the test time has expired, the high voltage is shut down and the test object discharged.

If the time switch is not used, press the discharge button (8) when testing is complete

- This also shuts down the high voltage and discharges the test object.

In both cases the test set remains on so that the ammeter and voltmeter can be used to check that discharging is complete.

- If switch (12) is set to " I", the high voltage is shut down if the end value in the first two current measuring ranges is exceeded by approx. 10%.

- If this happens, the indicator lamp (10) lights up. It will also remain on if the test object is discharged by the time switch, for example.

This means that the operator can see whether a flashover occurred during the test time even once the time has expired. The overcurrent trip does not cause the test object to be discharged. This makes it possible to detect momentary voltage drops which do not lead to full discharge and only cause momentary current peaks.

- When measuring has been completed, turn the test set off with switch (17).
 - If discharging has not yet taken place, it will be done now.
- Ground the test object properly before disconnecting it.

If the test set is operated in the overload range (see fig. 1) for an extended period, the high voltage may shut down. If this happens, lamp (16) will light up. The high voltage can only be switched on again once the test set has cooled down sufficiently.



Tento symbol indikuje, že výrobek nesoucí takovéto označení nelze likvidovat společně s běžným domovním odpadem. Jelikož se jedná o produkt obchodovaný mezi podnikatelskými subjekty (B2B), nelze jej likvidovat ani ve veřejných sběrných dvorech. Pokud se potřebujete tohoto výrobku zbavit, obraťte se na organizaci specializující se na likvidaci starých elektrických spotřebičů v blízkosti svého působiště.



Dit symbool duidt aan dat het product met dit symbool niet verwijderd mag worden als gewoon huishoudelijk afval. Dit is een product voor industrieel gebruik, wat betekent dat het ook niet afgeleverd mag worden aan afvalcentra voor huishoudelijk afval. Als u dit product wilt verwijderen, gelieve dit op de juiste manier te doen en het naar een nabij gelegen organisatie te brengen gespecialiseerd in de verwijdering van oud elektrisch materiaal.



This symbol indicates that the product which is marked in this way should not be disposed of as normal household waste. As it is a B2B product, it may also not be disposed of at civic disposal centres. If you wish to dispose of this product, please do so properly by taking it to an organisation specialising in the disposal of old electrical equipment near you.



Този знак означава, че продуктът, обозначен по този начин, не трябва да се изхвърля като битов отпадък. Тъй като е B2B продукт, не бива да се изхвърля и в градски пунктове за отпадъци. Ако желаете да изхвърлите продукта, го занесете в пункт, специализиран в изхвърлянето на старо електрическо оборудване.



Dette symbol viser, at det produkt, der er markeret på denne måde, ikke må kasseres som almindeligt husholdningsaffald. Eftersom det er et B2B produkt, må det heller ikke bortskaffes på offentlige genbrugsstationer. Skal dette produkt kasseres, skal det gøres ordentligt ved at bringe det til en nærliggende organisation, der er specialiseret i at bortskaffe gammelt el-udstyr.



Sellise sümboliga tähistatud toodet ei tohi käeldada tavalise olmejäätmena. Kuna tegemist on B2B-klassi kuuluva tootega, siis ei tohi seda viia kohaliku jäätmeahtuspunkti. Kui soovite selle toote ära visata, siis viige see lähimasse vanade elektriseadmete käitlemiseseerunud ettevõttesse.



Tällä merkinnällä ilmoitetaan, että kyseisellä merkinnällä varustettua tuotetta ei saa hävittää tavallisen kotitalousjätteen seassa. Koska kyseessä on yritysten välisen kaupan tuote, sitä ei saa myöskään viiedä kulluttajien käyttöön tarkoitettuihin keräyspisteisiin. Jos haluatte hävittää tämän tuotteen, ottakaa yhteyttä lähimpään vanhojen sähkölaitteiden hävittämiseen erikoistuneeseen organisaatioon.



Ce symbole indique que le produit sur lequel il figure ne peut pas être éliminé comme un déchet ménager ordinaire. Comme il s'agit d'un produit B2B, il ne peut pas non plus être déposé dans une déchèterie municipale. Pour éliminer ce produit, amenez-le à l'organisation spécialisée dans l'élimination d'anciens équipements électriques la plus proche de chez vous.



Cuireann an sibhail seo in iúl nár cheart an táirgeadh atá marcáilte sa tséil seo a dhíuicairt sa chóras fuiloi teaghlaigh. Os rud é gur táirgeadh ghno le gnó (B2B) é, ní féidir é a dhíuicairt ach oiread in ionaid dhúiseartha phobail. Más mian leat an táirgeadh seo a dhíuicairt, déan é a thógáil ag eagraíocht gar duit a sainfheidhíonn i ndíuicairt sean-fhearas leictreach.



Dieses Symbol zeigt an, dass das damit gekennzeichnete Produkt nicht als normaler Haushaltsabfall entsorgt werden soll. Da es sich um ein B2B-Gerät handelt, darf es auch nicht bei kommunalen Wertstoffhöfen abgegeben werden. Wenn Sie dieses Gerät entsorgen möchten, bringen Sie es bitte sachgemäß zu einem Entsorger für Elektrogeräte in Ihrer Nähe.



Αυτό το σύμβολο υποδεικνύει ότι το προϊόν που φέρει τη σήμανση αυτή δεν πρέπει να απορρίπτεται μαζί με τα οικιακά απορρίμματα. Καθώς πρόκειται για προϊόν B2B, δεν πρέπει να απορρίπτεται σε δημόσια σημεία απόρριψης. Εάν θέλετε να απορρίψετε το προϊόν αυτό, παρακαλούμε όπως να το παραδώσετε σε μία υπηρεσία συλλογής ηλεκτρικού εξοπλισμού της περιοχής σας.



Ez a jelzés azt jelenti, hogy az ilyen jelzéssel ellátott termékét tilos a háztartási hulladékokkal együtt kidobni. Mivel ez vállalati felhasználású termék, tilos a lakosság számára fenntartott hulladékgyűjtőbe dobni. Ha a terméket ki szeretné dobni, akkor vigye azt el a lakóhelyéhez közel működő, elhasznált elektromos berendezések begyűjtésével foglalkozó hulladékkezelő központhoz.



Questo simbolo indica che il prodotto non deve essere smaltito come un normale rifiuto domestico. In quanto prodotto B2B, può anche non essere smaltito in centri di smaltimento cittadino. Se si desidera smaltire il prodotto, consegnarlo a un organismo specializzato in smaltimento di apparecchiature elettriche vecchie.



Ští zme noráda, ka izstrádjumu, uz kura tá atrodas, nedrīkst izmest kopā ar parastiem mājsaimeniecības atkritumiem. Tā kā tas ir izstrádjums, ko cits citam pārdo un lieto tikai uzņēmumi, tad to nedrīkst arī izmest atkritumos tadās izgátuvēs un atkritumu savátuvēs, kas paredzētas vietējiem iedzīvotājiem. Ja būs vajadzīgs šo izstrádjumu izmest atkritumos, tad rīkojieties pēc noteikumiem un nogádājiet to tuvákajai vietā, kur paši nodarbojas ar vecu elektrisku ierīcu savákšanu.



Šis simbols rodo, kad juo paženklinto gaminio negalima išmesti kaip paprastų buitinių atliekų. Kadangi tai B2B (verslas verstui) produktas, jo negalima atiduoti ir buitinių atliekų tvarkymo įmonėms. Jei norite išmesti šį gaminį, atlikite tai tinkamai, atiduodami jį arti jūsų esančiai specializotai senos elektrinės įrangos utilizavimo organizacijai.



Dan is-simbolu jindika li l-prodott li huwa mmarkat b'dan il-mod m'ghandux jintrema bhal skart normali tad-djar. Minhabba li huwa prodott B2B , ma jistax jintrema wkoll f'centri d'ovicki ghar-rimi ta' l-iskart. Jekk tkun tixtek tarmi dan il-prodott, jekk joghgbok ghamel dan kif support tliedhu ghand organizzazzjoni fil-qrib li tispjegaliza fir-rimi ta' taghmira qadim ta' l-eletriku.



Dette symbol indikerer at produktet som er merket på denne måten ikke skal kastes som vanlig husholdningsavfall. Siden dette er et bedriftsprodukt, kan det heller ikke kastes ved en vanlig miljøstasjon. Hvis du ønsker å kaste dette produktet, er den riktige måten å gi det til en organisasjon i nærheten som spesialiserer seg på kassering av gammelt elektrisk utstyr.



Ten symbol oznacza, że produktu ninie opatrzonego nie należy usuwać z typowymi odpadami z gospodarstwa domowego. Jest to produkt typu B2B, nie należy go więc przekazywać na komunalne składowiska odpadów. Aby we właściwy sposób usunąć ten produkt, należy przekazać go do najbliższej placówki specjalizującej się w usuwaniu starych urządzeń elektrycznych.



Este símbolo indica que o produto com esta marcação não deve ser detado fora juntamente com o lixo doméstico normal. Como se trata de um produto B2B, também não pode ser detado fora em centros cívicos de recolha de lixo. Se quiser desfazer-se deste produto, faça-o correctamente entregando-o a uma organização especializada na eliminação de equipamento eléctrico antigo, próxima de si.



Acest simbol indică faptul că produsul marcat în acest fel nu trebuie aruncat ca și un gunoi menajer obișnuit. Deoarece acesta este un produs B2B, el nu trebuie aruncat nici la centrele de colectare urbane. Dacă vreți să aruncați acest produs, vă rugăm s-o faceți într-un mod adecvat, ducându-l la cea mai apropiată firmă specializată în colectarea echipamentelor electrice uzate.



Tento symbol znamená, že takto označený výrobek sa nesmie likvidovať ako bežný komunálny odpad.Keďže sa jedná o výrobok triedy B2B, nesmie sa likvidovať ani na mestských skládkach odpadu. Ak chcete tento výrobok likvidovať, odnesť ho do najbližšej organizácie, ktorá sa špecializuje na likvidáciu starých elektrických zariadení.



Ta symbol pomeni, da izdelka, ki je z njim označen, ne smete zavreči kot običajne gospodinjiske odpadke. Ker je to izdelek, namenjen za druge proizvajalce, ga ni dovoljeno odlagati v centrih za civilno odlaganje odpadkov. Če želite izdelek zavreči, prosimo, da to storite v skladu s predpisi, tako da ga odpeljete v bližnjo organizacijo, ki je specializirana za odlaganje stare električne opreme.



Este símbolo indica que el producto así señalado no debe desecharse como los residuos domésticos normales. Dado que es un producto de consumo profesional, tampoco debe llevarse a centros de recogida selectiva municipales. Si desea desechar este producto, hágalo debidamente acudiendo a una organización de su zona que esté especializada en el tratamiento de residuos de aparatos eléctricos usados.



Den här symbolen indikerar att produkten inte får blandas med normalt hushållsavfall då den är förbrukad. Eftersom produkten är en så kallad B2B-produkt är den inte avsedd för privata konsumenter, den får således inte avfallshanteras på allmänna miljö- eller återvinningsstationer då den är förbrukad. Om ni vill avfallshandera den här produkten på rätt sätt, ska ni lämna den till myndighet eller företag, specialiserad på avfallshandtering av förbrukad elektrisk utrustning i ert närområde.