Megger

SWG 1750 C/CD

Surge Wave Generator

USER GUIDE

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Consultation with Megger

The present system manual has been designed as an operating guide and for reference. It is meant to answer your questions and solve your problems in as fast and easy a way as possible. Please start with referring to this manual should any trouble occur.

In doing so, make use of the table of contents and read the relevant paragraph with great attention. Furthermore, check all terminals and connections of the instruments involved.

Should any question remain unanswered or should you need the help of an authorized service station, please contact:

Megger Limited

Archcliffe Road
Kent CT17 9EN
T: +44 1304 502100
F: +44 1304 207342
E: uksales@megger.com

Seba Dynatronic
Mess- und Ortungstechnik GmbH

Dr.-Herbert-Iann-Str. 6
D - 96148 Baunach
T: +49 9544 68 – 0
F: +49 9544 22 73
E: sales@sebakmt.com

Hagenuk KMT
Kabelmesstechnik GmbH

Röderaue 41
D - 01471 Radeburg / Dresden

T: +49 35208 84 – 0
F: +49 35208 84 249
E: sales@sebakmt.com

Megger USA

Valley Forge Corporate Centre
2621 Van Buren Avenue
Norristown, PA 19403 USA
T: +1 610 676 8500
F: +1 610 676 8610

Terms of Warranty

Megger accept responsibility for a claim under warranty brought forward by a customer for a product sold by Megger under the terms stated below.

Megger warrant that at the time of delivery Megger products are free from manufacturing or material defects which might considerably reduce their value or usability. This warranty does not apply to faults in the software supplied. During the period of warranty, Megger agree to repair faulty parts or replace them with new parts or parts as new (with the same usability and life as new parts) according to their choice.

This warranty does not cover wear parts, lamps, fuses, batteries and accumulators.

Megger reject all further claims under warranty, in particular those from consequential damage. Each component and product replaced in accordance with this warranty becomes the property of Megger.

All warranty claims versus Megger are hereby limited to a period of 12 months from the date of delivery. Each component supplied by Megger within the context of warranty will also be covered by this warranty for the remaining period of time but for 90 days at least.

Each measure to remedy a claim under warranty shall exclusively be carried out by Megger or an authorized service station.

This warranty does not apply to any fault or damage caused by exposing a product to conditions not in accordance with this specification, by storing, transporting, or using it improperly, or having it serviced or installed by a workshop not authorized by Megger. All responsibility is disclaimed for damage due to wear, will of God, or connection to foreign components.

For 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.

Since some states do not allow the exclusion or limitation of an implied warranty or of consequential damage, the limitations of liability described above perhaps may not apply to you.

Contents

1 Safety Instructions

1.1 General Notes

Safety precautions

This manual contains basic instructions for the commissioning and operation of the device / system. For this reason, it is important to ensure that the manual is always available to the authorised and trained operator. He needs to read the manual thoroughly. The manufacturer is not liable for damage to material or humans due to non-observance of the instructions and safety advices provided by this manual.

Locally applying regulations have to be observed!

Labelling of safety instructions

The following symbols may be present on the packaging material, on the instrument and in the manual:

Symbol	Description
 WARNING	Indicates a potential danger of an electric shock that may result in fatal or serious injury.
 CAUTION	Caution (refer to accompanying manual for instructions)! Indicates a potential danger that may lead to slight or moderate injury.
	The notes contain important information and useful tips for using the system. Failure to observe them can render the measurement results useless.

Working with products from Megger

It is important to observe the generally applicable electrical regulations of the country in which the device will be installed and operated, as well as the current national accident prevention regulations and internal company directives (work, operating and safety regulations).

After working on the system, it must be voltage-free and secured against reconnection as well as having been discharged, earthed and short-circuited.

Use genuine accessories to ensure system safety and reliable operation. The use of other parts is not permitted and invalidates the warranty.

Operating staff

The system may only be installed and operated by an authorised electrician. DIN VDE 0104 (EN 50191), DIN VDE 0105 (EN 50110) and the German accident prevention regulations (UVV) define an electrician as someone whose knowledge, experience and familiarity with the applicable regulations enables him to recognise potential hazards.

Anyone else must be kept away!

1.2 General Safety Instructions and Warnings

Intended application

The operating safety is only guaranteed if the delivered system is used as intended (see page 9). Incorrect use may result in danger to the operator, to the system and the connected equipment.

The thresholds listed in the technical data may not be exceeded under any circumstances.

Behaviour at malfunction of normal operation

The equipment may only be used when working properly. When irregularities or malfunctions appear that cannot be solved consulting this manual, the equipment must immediately be put out of operation and marked as not functional. In this case inform the person in charge who should inform the Megger service to resolve the problem. The instrument may only be operated when the malfunction is resolved.

Five safety rules

The five safety rules must always be followed when working with HV (High Voltage):

1. De-energise
2. Protect against re-energising
3. Confirm absence of voltage
4. Earth and short-circuit
5. Cover up or bar-off neighbouring energised parts

Using cardiac pacemaker

Physical processes during operation of high voltage may endanger persons wearing a cardiac pacemaker when near these high voltage facilities.

Wear Ear Protection

Surge operation can cause high and sudden noise levels. It is strongly recommended to wear hearing protection during surge operation. Keep in mind that this will limit the operators awareness for ambient dangers.

Fire fighting in electrical installations

- According to regulations, carbon dioxide (CO_2) **is required to be used** as extinguishing agent for fighting fire in electrical installations.
- Carbon dioxide is electrically non conductive and does not leave residues. It is safe to be used in energized facilities as long as the minimum distances are maintained. A CO_2 fire extinguisher must be always available within electrical installations.
- If, contrary to the regulations, any other extinguishing agent is used for fire fighting, this may lead to damage at the electrical installation. Megger disclaims any liability for consequential damage. Furthermore, when using a powder extinguisher near high-voltage installations, there is a danger that the operator of the fire extinguisher will get an electrical shock from a voltage arc-over (due to the powder dust created).
- It is essential to observe the safety instruction on the extinguishing agent.
- Applicable is DIN VDE 0132.

WARNING

Dangers when working with high voltage

Working on high voltage systems and equipment – especially in non-stationary operation – requires particular care and safety-conscious action on the part of test personnel. VDE regulations 0104 on setting up and operating electrical test systems, as well as EN 50191 and national standards and regulations must be strictly adhered to.

- The SWG 1750 C/CD generates a dangerous voltage of up to 32 kV.
- The test system may not be operated without supervision.
- Never fail to use safety equipment or put it out of operation.
- Operation requires minimum two people whereas the second person must be able to activate the emergency switch in case of danger.
- To prevent dangerous charge accumulation, earth all metal parts in the vicinity of the high voltage equipment.

2 Technical Description

2.1 System Description

Intended use

The SWG 1750 C/CD surge wave generator serves primarily for pinpoint location of cable faults. For this purpose, the impulse capacitors are charged and then discharged into the faulty cable which causes an arc at the weak point of the cable insulation (fault position). The resulting flashover noise as well as the magnetic pulse propagate in the ground and can be recorded, amplified and evaluated with a surge wave receiver (e.g. digiPHONE^{+}) on the surface. The distance to the fault can be calculated using either the volume of the flashover noise or the time difference between the arrival of the magnetic pulse and the flashover noise.

When combined with a reflectometer and an ARM filter in a test van environment, the SWG 1750 C/CD can also be used for pre-location of cable faults by means of the arc reflection measurement (ARM) and / or the current decoupling (ICE, Impulse Current Equipment) method.

Scope of delivery

The scope of delivery of the system includes the following:

- Surge wave generator
- Auxialiary surge attachment (CD model only)
- HV connection cable, 4 m
- Mains connection lead, 2,5 m
- 2 x earthing lead, 5 m
- Manual

Optional accessories

If the following optional accessories are not contained in the scope of delivery, it can be ordered from SebaKMT Sales:

Accessory	Description	Item number
Isolating Transformer GTV 2500VA	Protection against voltage spikes and overvoltage which may occur in the supply network	108300126

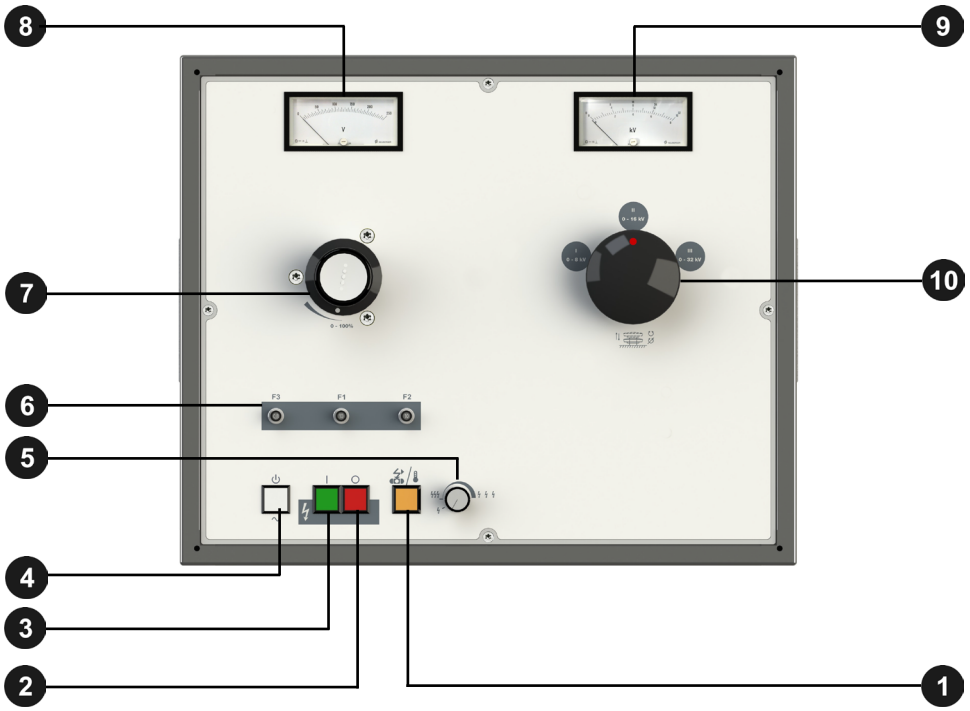
2.2 Technical Data

The surge wave generator has the following parameters:

Parameter	Value
Surge voltage	0 … 8 kV / 16 kV / 32 kV
Output power	
• C model	1750 J
• CD model	3500 J
Surge sequence	Single shot or 2.5 s … 10 s
Maximum charging current	
• at 0 … 8 kV	210 mA
• at 0 … 16 kV	105 mA
• at 0 … 32 kV	53 mA
Capacity	
• at 0 … 8 kV	54.4 µF (C) or 109 µF (CD)
• at 0 … 16 kV	13.6 µF (C) or 27.2 µF (CD)
• at 0 … 32 kV	3.4 µF (C) or 6.8 µF (CD)
Power supply	230 VAC ±10%, 45 … 60 Hz (maximum surge energy can be guaranteed only at 230 VAC)
Current consumption	6.5 A (average value)
Weight	
• Basic unit	97 kg
• Auxialiary surge attachment (CD version)	30 kg
Dimensions (W x D x H)	
• Basic unit	520 x 430 x 630 mm
• Auxialiary surge attachment (CD version)	520 x 270 x 410 mm
Operating temperature	-20 °C … 40 °C
Storage temperature	-40 °C … 70 °C
Relative humidity	93% at 30 °C
Protection class (according to IEC 61140 (DIN VDE 0140-1))	I
Protection rating (according to IEC 60529 (DIN VDE 0470-1))	IP20

2.3 Controls

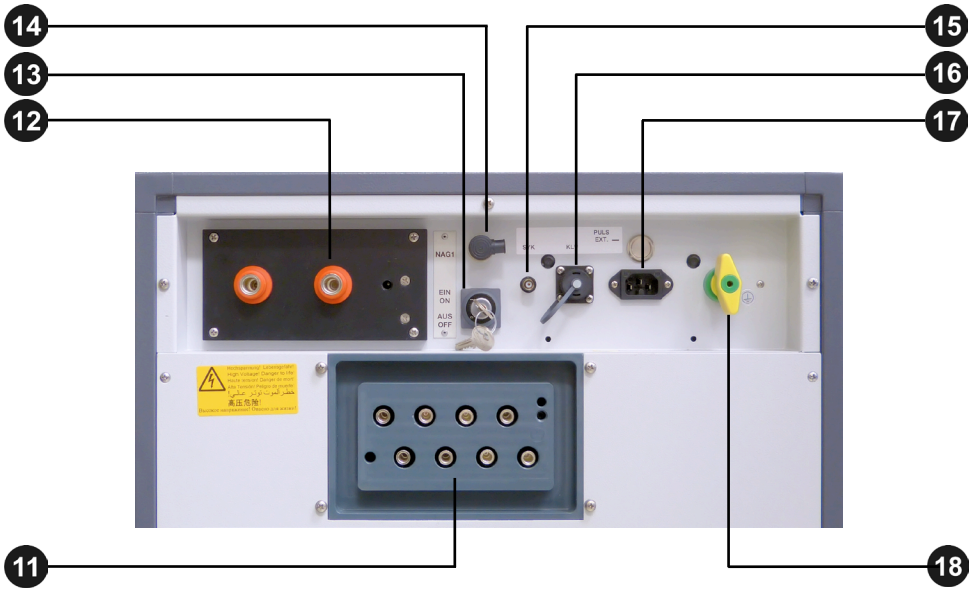
The SWG 1750 C/CD has the following controls:



Element	Description
1	Single shot push-button / over temperature indicator
2	“HV OFF” push-button
3	“HV ON” push-button
4	On/off push-button
5	Surge sequence rotary switch
6	Fuses F1/F2: 10 A circuit breaker F3: M 0,8/250 (control)
7	Surge voltage control knob (with zero contact)
8	Input voltage meter
9	Charging voltage meter
10	Surge level switch

2.4 Connection Components

The following connection components are located on the rear of the SWG 1750 C/CD:



Element	Description
11	Socket for connection of auxiliary surge attachment (CD version only)
12	HV output
13	"HV interlock" key switch
14	Socket for connection of external emergency unit NAG 1
15	BNC socket for connection to a reflectometer (current coupler)
16	Socket for connection to an arc stabilisation unit (LSG)
17	Mains power socket
18	Protective earthing connection

3 Commissioning

 **WARNING**	**General safety instructions for set-up and commissioning** • The safety guidelines for the operation of mobile testing systems often differ from one network operator to another and are frequently subject to national regulations (such as the German BGI 5191). Before the measurement session, find out what the applicable guidelines are and follow the rules set out therein precisely, in respect of the organisation of work and the commissioning of the mobile test system. • Select a location which is sufficient for the weight and size of the system and ensures that it stands securely. • When setting up or connecting the system, make sure that it does not impair the functional capability of any other systems or components. If other systems and components have to be modified, be sure to reverse these measures once the work has been completed. Always take the special requirements of these systems and components into account and only carry out work on them after consulting and obtaining approval from whoever is in charge of them. • In the event of larger differences in temperature between the storage and installation locations (cold to warm) condensation may form on components carrying high voltage (condensation effect). To avoid any risk of damage to people and devices caused by voltage arc-overs, the device must not be operated when in this condition. It should instead be left in the new environment for roughly one hour to acclimatise before it is then put into operation.

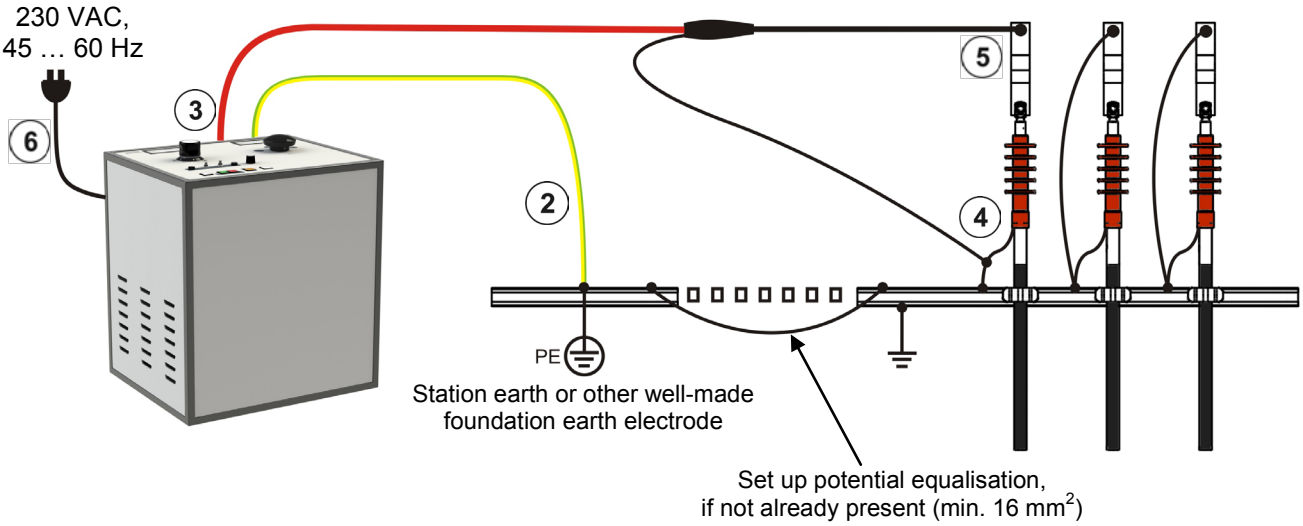
3.1 Electrical Connection

 **WARNING**	**Safety instructions for the electrical connection** • The SWG 1750 C/CD may only be connected to **de-energised** equipment. The general safety instructions and, in particular, the five safety rules (see page 7) must always be followed prior to connection to the test object. • Follow the specified connection sequence. • All cables which are out of operation and not needed for the test must be shorted and earthed. • Because the voltage applied to the device under test can exhibit values that represent a shock hazard, the test station itself and the ends of the cables must be shielded as per VDE 0104 to ensure that such contact is not possible. When doing so, be sure to take all cable branchings into account.

The procedure described below specifies how the SWG 1750 C/CD is to be connected electrically when in stand-alone mode.

Devices, which are permanently installed into a test van, are connected to the defective cable using the vehicle's connection equipment. The procedure to be used here is available in the respective operating manual.

Connection diagram The following figure shows the simplified connection diagram of a SWG 1750 C/CD in stand-alone mode:



Procedure Proceed as follows, to connect the SWG 1750 C/CD to the defective cable:

Step	Action
1	***To be performed for CD version only:*** Connect the additional surge battery with the aid of the given connecting cable (High-tension supply line and earth cable) to each of the sockets (11 and 18) on the rear of the SWG 1750 C/CD.
2	Using the green/yellow earth cable make a connection between the protective earth connection 18 of the device and a suitable point on the protective earth system (station earth). Make sure that the connecting points of the earth cable are not soiled and that they provide good metallic contact.
3	Plug the connector for the HV connecting cable to the HV-output 12 of the device and **tighten the locking screw fitted to the plug connector** (contact switch!).

Step	Action
4	Connect the screen of the HV connection cable to the earthed screen of the defective cable (operational earth). The screen of the HV connection cable should be fastened as close as possible to the position at which the screen of the cable under test is led out of the termination.
5	Connect the core of the HV connection cable to the core of the defective cable.
6	Connect the mains power cable included in the package to the system's mains connection lead 17 and a power supply socket. If the package contents include an isolating transformer, then it is to be connected between the mains power cable and the power supply socket as protection against voltage peaks and overvoltage!

3.2 Preselecting Surge Level

Selection of the surge level can only be made as long as the device is switched off (the green push-button 3 and the red push-button 2 are not lit). When the device is switched on a blocking magnet prevents the switch from being operated.

The plug-in rotary switch 10 can be used to choose between the following surge levels:

Position	Surge level
I	0 … 8 kV
II	0 … 16 kV
III	0 … 32 kV

In order to be able to utilise the maximum possible output power, in particular, when in pinpointing mode (loud "bang" at fault location), **the smallest surge level required for igniting the fault should be selected**. For example, at an ignition voltage of 14 kV the 16 kV surge level should be selected.

To change the surge level, the switch has to be forcibly pulled upwards, turned to the required position and then forcibly pushed down again.

CAUTION	Any attempt to operate the plug-in rotary switch during operation will lead to the device being shut down. The charge energy present in the pulse capacitors and cable can however, destroy the switching contacts.

3.3 Switching On

Requirements

In stand-alone mode the SWG 1750 C/CD can be switched on immediately after all connecting lines have been fitted (the white ON-/OFF-button 4 lights up).

To transfer a device permanently fitted into a test van into this state, the test van's system control panel has to be switched on first. Following this, a surge operating mode has to be selected and HV has to be enabled on the system control panel.

Detailed instructions on the procedure are available in the operating manual of the test van.

Switching on

The SWG 1750 C/CD can be switched on by pressing the ON/OFF button 4. The enabled operational readiness is then indicated by the "HV ON" button 3 lighting up in green. There is not yet any high voltage in this state because the HV output is still earthed.

If the button should fail to light up, this is probably down to one of the following reasons:

- Plug connector of HV connection cable not properly fastened to HV output 12 or locking screw not tightened
- Plug connector or dummy plug not properly fastened to socket for connecting the auxiliary surge attachment 11 or the locking screw is not tightened (CD version only)
- The plug-in rotary switch 10 is not latched correctly into a position
- The control knob for adjusting the surge voltage 7 is not set to the left limit stop (0%)

Enabling high voltage

Once operational readiness has been established, HV can be enabled by pressing the illuminated green "HV ON" button 3.

The green button then goes out and the red "HV OFF" button 2 lights up. The internal earthing is lifted and **high voltage may be present at the HV output!**

If the red button fails to light up even after pressing the green button and it has gone out, one must then still assume that the switch-on standby has been enabled and that high voltage is applied to the HV-output!

4 Operation

4.1 Setting of the Surge Voltage

Basic principles

In particular when pinpointing a cable fault it is vital that the maximum amount of surge energy is utilised, because the discharge energy and the loudness of the "bang" impact proportionally on the fault location.

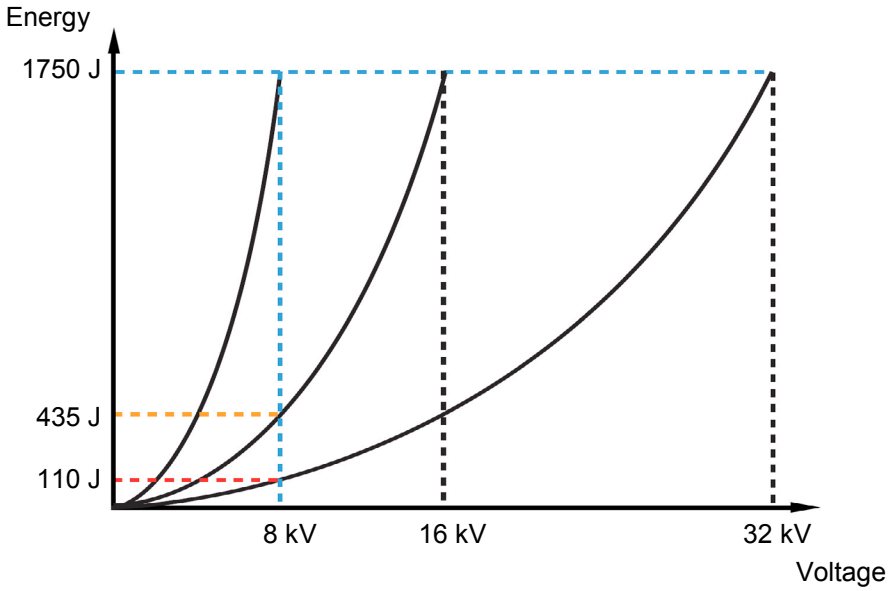
The surge energy depends directly from the set surge voltage. The full surge energy is only reached, when the maximum surge voltage of the selected surge level has set (voltage regulator 7 set to right limit stop (100%)).

At a lower surge voltage the remaining available energy is calculated using the following formula:

$$W = 0.5 \times C \times U^2$$

Example

The following example can be derived based on the quadratic relationship between voltage and capacity:



As the diagram clearly shows, the correct choice of surge level (see page 15) plays a decisive role. This means that for a required surge voltage of 8 kV, the full energy of 1750 J is only reached in the 8 kV-surge level.

In the next higher surge level (16 kV) the available energy is then reduced to 435 J (roughly 25%). In the 32 kV surge level only 110 J (roughly 6%) would be available at a surge voltage of 8 kV.

Adjusting surge voltage

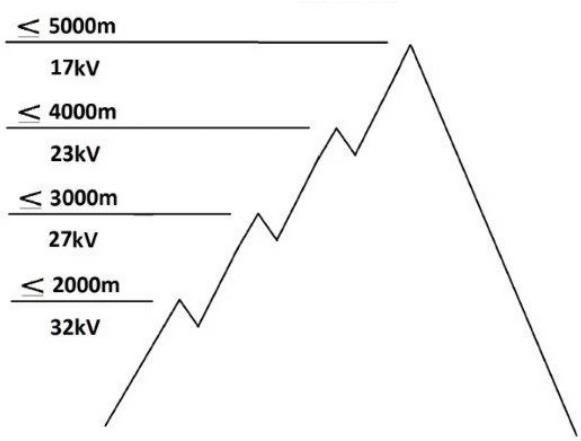
Before setting the surge voltage, the control knob for setting the surge sequence 5 has to be turned to left limit stop (single shot). In this way, the required surge voltage can be precisely set without surges being automatically released in between doing so.

To adjust the voltage, the voltage regulator 7 has to be turned slowly in a clockwise direction. The current capacitor charging voltage can be read off the analogue kV meter 9.

With a view to the optimum energy efficiency (see previous page), setting the voltage regulator to <50% is not very practical (except in the lowest surge level). Instead of this the SWG 1750 C/CD should be switched off and a lower surge level should be selected (see page 15).

CAUTION

- To avoid any damage to the cable, the set surge voltage must not exceed the limits for the particular type of cable!
- If the SWG 1750 C/CD is to be operated with a supply voltage of up to 10% above 230 VAC, the actual charging voltage must not exceed the maximum value of the set surge level (e.g. 16 kV) (keep an eye on the kV meter)! Otherwise damage may occur to the system's HV components.
- Depending on the operating altitude, the following limits have to be considered while setting the voltage:



4.2 Adjusting Surge Sequence

The surge sequence can be adjusted using the control knob (5). Automatic surge decoupling is switched off on the left limit stop on this control knob (single shot mode). This setting is to be selected for the cable fault location in combination with a connected reflectometer.

In order to activate an automatic surge decoupling for cable fault pinpointing, the control knob must be rotated in a clockwise direction and then set to the required position.

The surge sequences will be as follows to match the control knob position:

Single shot

Each surge pulse must be activated by pressing a button.

Fastest surge sequence

The surge pulses occur at intervals of roughly 2.5 seconds.

Medium surge sequence

The surge pulses occur at intervals of roughly 5 seconds.

Slowest surge sequence

The surge pulses occur at intervals of roughly 10 seconds.

4.3 Operating Modes

4.3.1 Pinpointing a Cable Fault (Continuous Surging)

Procedure Once the required surge sequence and the surge voltage have been set (see previous sections), the SWG 1750 C/CD immediately starts continuous decoupling of the surge pulses in the defective cable.

The fault position can then be located with the aid of a suitable surge wave receiver (such as, e.g. the digiPHONE^{+}).

For more details about operating the surge wave receiver, please read the accompanying instructions.

Do not leave the system in operation unattended and accessible to the third parties. Cordon off the location in a secure manner or instruct an authorised person to monitor the system.

Excess temperature The device is automatically switched off if any overheating occurs in the high-voltage transformers. This fault condition is indicated by the button 1 lighting up yellow. After a corresponding cooling-down period the device can be switched on again.

4.3.2 Pre-locating a Cable Fault (Single Shot / Charging)

Requirements

The SWG 1750 C/CD supplies the necessary surge voltage to provoke a fault breakdown thereby enabling this fault to be located using pre-location technologies such as the arc reflection measurement (ARM) and / or the current decoupling (ICE) method.

The devices required for this (reflectometer, ARM filter) are usually installed together with the SWG 1750 C/CD on an assembly trolley or in a test van permanently wired to each other. To perform pre-location based on the current decoupling method, two available individual devices (SWG 1750 C/CD and a matching reflectometer) can also be temporarily connected to each other.

For information on setting up and operating the reflectometer, please see the associated operating manual.

Triggering a single shot

For pre-locating cable faults the SWG 1750 C/CD must be configured for single shot operation (see page 19) and the reflectometer set to recording standby. The reflectometer display then shows a prompt to trigger a single shot.

Once the resulting surge voltage has been increased to the voltage level necessary for triggering a fault, the single surge can be triggered by briefly pressing the yellow button 1.

Finally, the capacitor is charged again to the configured surge voltage, and it remains in this state until the next shot is actuated or the SWG 1750 C/CD is switched off.

Charging the cable

As an alternative to a surge discharge, the triggering of high-resistance faults can also be provoked by charging the cable (applicable for chargeable cables only).

Here, with the surge switch closed, both the surge capacitor itself and the connected cable are charged. Thereby, the available surge capacity is increased by the cable capacity, something which can be very helpful for particularly long cables.

In the first step, both the control knob for setting the surge sequence 5 and the voltage regulator 7 must be turned to the left limit stop. After the reflectometer has then been set to recording standby, the yellow button 1 must be pressed and held. By uniformly increasing the voltage the cable can now be charged until the voltage exceeds the breakdown voltage of the fault (press and hold yellow button here until the breakdown occurs).

Determining fault distance

If a breakdown occured (voltage on kV meter 9 suddenly breaks down) the reflectometer - depending on the operating mode - either records the oscillating wave of the decoupled current or conducts a pulse reflection measurement (fault trace).

All the steps required for determining the fault distance are to be made on the reflectometer itself.

If the recorded curve doesn't enable any conclusions to be reached regarding the fault position, the settings on the reflectometer should be optimized and the fault should be triggered again using the SWG 1750 C/CD.

5 Concluding the Test

Once the measurement has been completed, the SWG 1750 C/CD can be switched off with the on/off push-button 4.

Disconnection is carried out in the reverse order of the electrical connection (see page 14) and in compliance with the safety instructions listed below.

 WARNING	• Follow the five safety rules (see page 7). • Even if proper disconnection and discharging via the internal discharging device has taken place, system components that have been under voltage should only be touched once they have been discharged using an adequate discharging rod and visibly earthed and shorted. • Only undo the earthing and short circuiting measures when the test object is to be operated again.

6 Maintenance and Care

Repair and maintenance

Repair and maintenance work has to be carried out by Megger or authorised service partners using original spare parts only. Megger recommends having the system tested and maintained at a Megger service centre once a year.

Megger also offers its customers on-site service. Please contact your service centre if needed.

Storage

If the device is not used for a lengthy period, it should be stored in a dust-free and dry environment. Continuous moisture (humidity) especially when combined with dust can reduce critical insulating clearances that are essential for safe high-voltage operation.

Fuse replacement

When changing a blown fuse it should be ensured that the replacement is of the correct current rating and specified type.

Never use a makeshift fuse or short-circuit a fuse holder.

Disconnect from power before changing a fuse.

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 изхърля и в градски пунктове за отпадъци. Ако желаете да извърлите 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 käidelda tavalise olmejäätmena. Kuna tegemist on B2B-klassi kuuluva tootega, siis ei tohi seda viia kohalikku jäätmekäitluspunkti. Kui soovite selle toote ära visata, siis viige see lähimasse vanade elektriseadmete käitlemisele spetsialiseerunud 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 viedä kuluttajien käyttöön tarkoitettuihin keräyspisteisiin. Jos haluatte hävittää tämän tuotteen, ottakaa yhteys 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 déchetterie 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 siombail seo in iúl nár cheart an táirgeadh atá marcáilte sa tslí seo a dhiúscairt sa chóras fuíoll teaghlaigh. Os rud é gur táirgeadh ghnó le gnó (B2B) é, ní féidir é a dhiúscairt ach oiread in ionaid dhiúscartha phobail. Más mian leat an táirgeadh seo a dhiúscairt, déan é a thógáil ag eagraíocht gar duit a sainfheidhmíonn i ndiúscairt sean-fhearas leictrigh.

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 Elektroaltgeräte 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 δημοτικά 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 terméket tilos a háztartási hulladékokkal együtt kidobni. Mivel ez vállalati felhasználású termék, tilos a lakosság számára fenntartott hulladékgyűjtőkbe 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.

Šī zīme norāda, ka iztrādājumu, uz kura tā atrodas, nedrīkst izmest kopā ar parastiem mājsaimniecības atkritumiem. Tā kā tas ir izstrādājums, ko cits citam pārdod un lieto tikai uzņēmumi, tad to nedrīkst arī izmest atkritumos tādās izgāztuvēs un atkritumu savāktuvēs, kas paredzētas vietējiem iedzīvotājiem. Ja būs vajadzīgs šo izstrādājumu izmest atkritumos, tad rīkojieties pēc noteikumiem un nogādājiet to tuvākajā vietā, kur īpaši nodarbojas ar vecu elektrisku ierīču savākšanu.

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

Dan is-simbolu jindika li l-prodott li huwa mmarkat b'dan il-mod m'għandux jintrema bħal skart normali tad-djar. Minħabba li huwa prodott B2B , ma jistax jintrema wkoll f'ċentri ċiviċi għar-rimi ta' l-iskart. Jekk tkun tixtieq tarmi dan il-prodott, jekk jogħġbok għamel dan kif suppost billi tieħdu għand organizzazzjoni fil-qrib li tispeċjalizza fir-rimi ta' tagħmir qadim ta' l-elettriku.

Dette symbolet 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 nim 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 deitado fora juntamente com o lixo doméstico normal. Como se trata de um produto B2B, também não pode ser deitado 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 şi un gunoi menajer obişnuit. Deoarece acesta este un produs B2B, el nu trebuie aruncat nici la centrele de colectare urbane. Dacă vreţi să aruncaţi acest produs, vă rugăm s-o faceţi într-un mod adecvat, ducând-ul la cea mai apropiată firmă specializată în colectarea echipamentelor electrice uzate.

Tento symbol znamená, že takto označený výrobok 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, odneste ho do najbližšej organizácie, ktorá sa špecializuje na likvidáciu starých elektrických zariadení.

Ta simbol pomeni, da izdelka, ki je z njim označen, ne smete zavreči kot običajne gospodinjske 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 señalizado 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 avfallshantera den här produkten på rätt sätt, ska ni lämna den till myndighet eller företag, specialiserad på avfallshantering av förbrukad elektrisk utrustning i ert närområde.