SUNBELT RENTALS

Datasheet

0370 330 6021
www.sunbeltrentals.co.uk

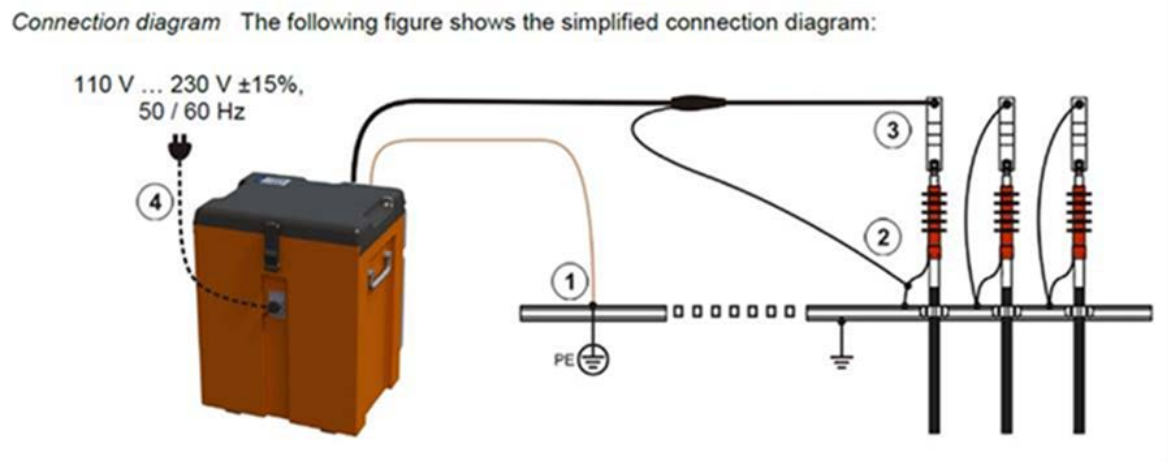
IMPORTANT ADVISORY NOTICE

It has recently come to our attention that some users are not connecting the EZ Thump correctly. Safety is paramount and Megger is acting upon this information as a responsible supplier to ensure that it conveys the importance of using this equipment within the guidelines.

The EZ Thump MUST be connected as explicitly stated in the User Guide that accompanies the instrument. If the user fails to follow these instructions, a hazard may arise exposing a risk to the user, with subsequent damage to the equipment.

The diagram below is an extract from the User Guide:

The EZ thump has one High Voltage output lead (labelled 3) and two earth return leads. The HV earth return lead (labelled 2) is the measurement lead and must be connected to the test piece and to earth (ground) for safety. The safety earth (labelled 1) is an additional earth return path that must also be connected to ground, close to the user, so that if the HV return is accidentally disconnected this additional safety earth redirects the output current safely through the unit.



To ensure correct earth connection between return earth (2) and additional safety earth (1), a measurement must be made using an appropriate ohmmeter. The user can then confirm the resistance between earth connections 1 and 2 is no more than 5 ohms. This information is specified in the User Guide.

In Version 1 EZ Thumps it is also advised to check the safety earth, before connection to the test piece. This is done by measuring between the HV earth return and safety earth return leads (labelled 1 and 2 in the diagram). This value should be 100 ohms +/- 10 ohms. If the measurement is not 100 ohms +/- 10 ohms, please return the unit to your local Megger Authorised Service centre for investigation.

Megger Limited, Archcliffe Road, Dover, Kent CT17 9EN United Kingdom.
T +44 (0)1304 502 100 - F +44 (0)1304 207 342 - E uksales@megger.com, www.megger.com
Registered No. 02110613 - Registered to ISO:9001 - Certificate No: FS 560387. Registered to ISO:14001 Certificate No: EMS 560388

V1 EZ Thumps can be identified by the serial number sticker on the operator plate. Another means of identifying V1 units have their associated leads stored in the back of the unit.

Version 2 EZ Thumps have an additional earth measurement functionality (F-Ohm). This continuously monitors the earth return and automatically disables the test if a reading between measurement and safety earth exceeds 5 ohms. Consequently, the advisory comment above regarding the 100 ohm check does not apply.

V2 units can be identified by the serial number sticker on the operator plate. Another means of identifying V2 units is that the leads are stored in a fabric case on top of the lid, as well as an IEC socket on the front of the unit. V2 units are always grey in colour.

All users must be aware that this instrument outputs high voltage and must only be used by competent, trained engineers. Full operational details are in the user guide which shall always accompany the unit. All safety warnings in the user guide must be adhered to. Megger can provide training on the EZ thump and any other Megger products if required.

If you have any queries on the above, please contact Megger.

EZ-THUMP™ 3 kV & 4 kV, Models V2

Portable Cable Fault Location Systems for Low Voltage Cables

- ***Dual-stage* capacitor surge discharge: 500 J @ 1.5 kV & 3.0 kV for new 3 kV model**
- **Single-stage capacitor surge discharge: 500 J for 4 kV model**
- **Compact and lightweight, 75 lbs (34 kg)**
- **Battery and AC line operation; field-replaceable battery**
- **Automatic end of cable and distance to fault indication**
- **Up to 94 mA current, depending on voltage**
- **F-OHM safety feature to ensure safe grounding**
- **Interface for remote EMERGENCY OFF box**
- **HiBrite color display for excellent outdoor visibility**
- **TDR prelocation of very low resistance faults**
- **ARM® prelocation of high resistance/flashover faults**
- **Fault pinpointing, high- and low-resistive fault**
- **Sheath testing and sheath fault locating**

DESCRIPTION

The new *dual-stage* 3 kV EZ-Thump is the first of its kind in the entire market, and along with the updated 4 kV single-stage unit they are portable, compact and lightweight, battery and AC line operated cable fault location systems *specifically designed for fault locating of shielded and unshielded low voltage power cables*.

Due to their portable, robust and (wet) outdoor-capable enclosure, they are ideally suited for all typical fault locating operations on LV cables either in industrial applications up to 3 kV or 4 kV, street light fault locating or fault locating of LV power circuits in the utility industry.

The EZT3DV2 model is the only dual-stage 3 kV unit in the market which addresses LV cables with either 600 V or 1000 V ratings and a max permissible test level of 3 U_O (1.8 kV or 3 kV).

The EZ-Thump units offer:

- TDR method to prelocate very low resistance cable faults.
- Arc Reflection Method (ARM®) prelocation of high resistance/flashover faults.
- *Dual-stage* 500 Joule surge generator for pinpointing of high resistive faults at 0-1.5 kV or 0-3 kV (3 kV model) or as single-stage 500 J 0-4 kV (4 kV model).
- Testing 0-1.5 / 0-3 kV or 0-4 kV for breakdown detection.
- Insulation resistance measurement.
- Sheath testing and sheath fault locating.
- *Dual stage* 0-1.5 kV / 0-3 kV or single-stage 0-4 kV DC testing.

APPLICATIONS

Testing (proof/insulation testing, sheath testing)

Used to test the dielectric strength of the cable or sheath insulation and, if the test fails, to determine the breakdown voltage. For this purpose a test voltage up to 1.5 kV, 3 kV kV or 4 kV is applied to the cable under test indicating the resistance value.

Fault prelocation

After identifying the type of fault as high resistance/flashover, prelocation of any concentric neutral type LV cable can be determined using ARM. In ARM, the electrical arc from the flashover creates a temporary "jumper" to the neutral. During this condition, a standard TDR measurement is made into what is basically a short circuit fault providing a negative reflection at the location of the fault. Multi-conductor nonshielded LV cables with the *same type of fault* can be typically processed in the same way (phase to phase or phase to neutral).

Faults identified as low resistance/non flashover type in either shielded or unshielded cables can be *prelocated* using the TDR method.

Pinpoint fault location

Accurate pinpoint fault location of high resistance faults is achieved using the "Thunder & Lightning" method whereby the 4 kV single or 3 kV *dual stage* 500 Joule surge generator (thumper) and an acoustic/electromagnetic receiver are used.

Pinpointing of low resistance faults in unshielded cables requires the *additional* ESG NT digital ground/ earth fault locator with or without optional "A" frame. Accurate location of faults is achieved using the voltage gradient method. When approaching the fault, the voltage gradient potential increases, while decreasing with reversed polarity after passing the fault. The change in polarity allows the fault to be located precisely.

FEATURES

- Aside from the expert mode, the quick-step mode combined with the simple E-Tray GUI are especially convenient for operators who do not use the equipment on a regular basis.
- Automatic fault locating procedure starting with a hipot testing, continuing with the prelocation and pinpointing.
- Operating of unit via E-Tray GUI and rotary control knob.
- Automatic end of cable and distance to fault detection.
- Automatic sectionalizing (for specific markets).
- Automatic breakdown detection.
- Safety key switch interlock (also available without).
- F-OHM HV interlock to detect improper grounding.
- Operation from internal battery or from an AC source, or simultaneous charging of battery and AC operation.
- Rugged, lightweight, high impact and weather resistant IP53 designed enclosure.

EZT3DV2 with permanently mounted cart. See configurator on following page, identifier WK.

SPECIFICATIONS

Testing

Output:	0 – 1.5/0 - 3 kV, 94/47 mA DC 0 – 4 kV, 35 mA DC

Prelocation

TDR:	Phase to neutral, phase to phase, on screen comparison of up to 256 pairs Range: 25,000 ft (7.6 km) Sampling Rate: 100 Mhz Resolution: 2.5 ft @ 250 ft/ƒs 0.8 m @ 80 m/µs
Arc Reflection:	0 – 1.5/0 - 3 kV 0 – 4 kV

Pinpoint Fault Location

Surge:	0 - 1.5/3.0 kV @ 500 J 0 - 4 kV @ 500 J
Impulse Sequence:	5 - 10 seconds or single shot

Display

5.7 in. (14.48 cm)
HiBrite TFT Color LCD 640 x 480 pixel

Memory

1000 traces

Interface

USB Port

Cables Supplied

15 ft (4.5 m) HV flexible shielded cable; 50 ft (15 m) optional
15 ft (4.5 m) safety ground cable; 50 ft (15 m) optional
6 ft (1.8 m) AV supply lead set (US/Schuko/UK plug)

Terminations

T1 (typically North America): 14 mm male MC for HV output with matching hotline clamp attachment; HV return and safety ground with hooks and matching hotline clamp attachment.
T2 (typically North America): same as T1, however, hotline clamp attachments for HV output and HV return are replaced by vise grip attachments.
T3 (typically UK): the HV output and HV return leads are terminated with hardwired battery clamps.
T4 (typically all other countries): 10 mm female MC for HV output and HV return with matching battery clamp attachments, safety ground with hook and matching hotline clamp attachments.

Supply

Battery:	Internal 24 V NiMH Battery 5 AH Approx. 30 - 60 mins of surge/thumping Approx. 3 hours recharge time
AC Line:	100 – 230 VAC ±50/60 Hz

Safety

Emergency stop
Key-switch Interlock, standard (available without)
F-OHM interlock detection /indication "proper grounding"
Interface for remote EMERGENCY OFF box

Environmental

Operating Temperature:	4° F to 122° F (-20° C to +50° C)
Storage Temperature:	-12° F to 160° F (-25° C to +70° C)

IP Rating

IP53 (with top open)

Weight

71 - 75 lbs (32 - 34 kgs)

Dimensions (include top mounted cable pouch)

14 x 11 x 25 in. (35.5 x 28 x 64 cm)

ORDERING INFORMATION					
MODEL EZT3DV2- MODEL EZT4V2-		**YY**	**ZZ**		
SELECT CABLE LENGTH	15 ft (4.5 m) Standard cable	15			
	50 ft (15 m) Custom cable	50			
SELECT CABLE TERMINATION	14 mm male MC with hotline clamps (North America)		TI		
	14 mm male MC with vise grips (North America)		T2		
	2 x hardwired battery clamps (typical UK no alternative termination attachments)		T3		
	2 x 10 mm female MC with battery clamps (CEE, ROW & CSA)		T4		
* SELECT SOFTWARE OPTION	Sectionalizing software (HDW patent US B 6, 683,459 B2)			S	
	Sheath fault testing / secondary fault locating			H	
	Manual voltage control			M	
**PREP KIT	Hand cart, foldable				C
***PERMANENTLY ATTACHED CART	Provides special permanently attached cart with telescope handle and air tires				WK
DELIVERY WITHOUT SAFETY KEY SWITCH					P
Optional accessories					
15-kV elbow 14 mm female MC connector					865000100100000
25-kV elbow 14 mm female MC connector					865000200100000
35-kV elbow 14 mm female MC connector					865000300100000
DigiPhone Plus surge wave receiver					1003316-S
ESG NT digital earth fault locator					1004629-S
Remote EMERGENCY OFF box with cable					893024147 and 890024896
Hand cart, foldable					895000180110000

NOTE: Prep kit feature C and permanently attached cart feature WK are mutually exclusive.

* Software options can be combined in any way
**Prep kit accommodates either cable lengths of 15 ft (4.5 m) or 50 ft (15 m)

***Permanently attached cart accommodates either cable lengths of 15 ft (4.5 m) or 50 ft (15 m)

SALES OFFICE
Megger USA -
4271 Bronze Way
Dallas, TX 75237-1019 USA
T 1 800 723 2861 (USA only)
T. 1 214 333 3201
F. 1 214 331 7399
USsales@megger.com

EZ ThumpModelV2_3-4kV_DS_US_V02aa
www.megger.com
ISO 9001

We are supporting you to deliver a world class service, every day, in every sector...

LOCATIONS

LONDON, HEATHROW
Sunbelt Rentals UK Test & Monitoring
242-252 London Road, Staines, London TW18 4JQ
0333 122 3126
www.sunbeltrentals.co.uk/find-a-depot/london-heathrow

REDCAR
Sunbelt Rentals UK Test & Monitoring
Unit 5 Kirkleatham Business Park, Redcar TS10 5SQ
0370 330 6021
www.sunbeltrentals.co.uk/find-a-depot/teesside

STOKESLEY
Sunbelt Rentals UK Test & Monitoring
2 Ellerbeck Way, Stokesley Business Park, Stokesley, North Yorkshire TS9 5JZ
01642 718 900
www.sunbeltrentals.co.uk/find-a-depot/stokesley

www.inlec.com

Order Online with Next Day Delivery, Online Chat & Online Account Management

Trustpilot

View our trustpilot score

★★★★★

0370 330 6021
instrumentation@sunbeltrentals.co.uk
testequipment@sunbeltrentals.co.uk
www.sunbeltrentals.co.uk

SUNBELT® RENTALS