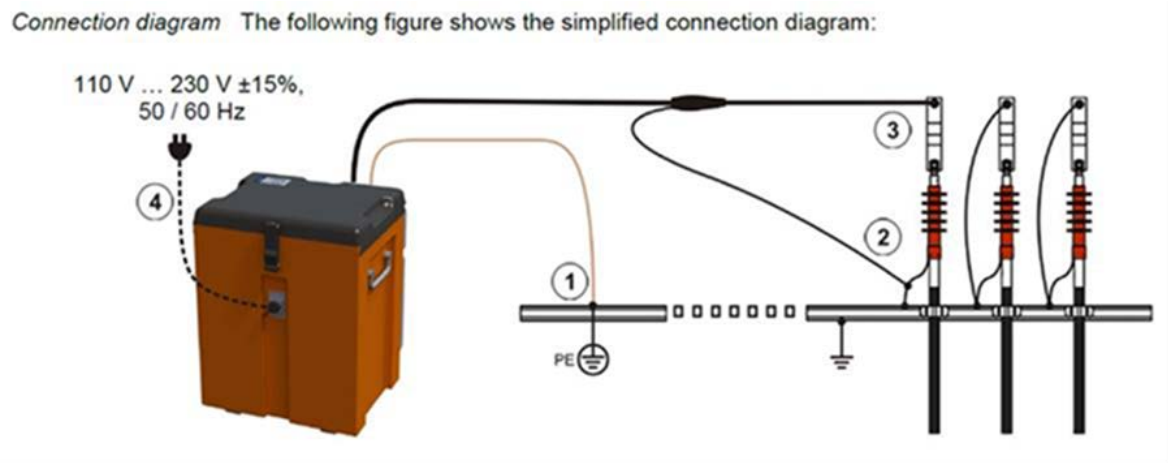
IMPORTANT ADVISORY NOTICE

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.

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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™ Series

Portable Fault Location Systems

- **Compact, lightweight and rugged field instruments**
- **Battery and AC line operation**
- **Automatic end-of-cable and fault locating**
- **4-kV or 12-kV output versions available**
- **Transflective color display**
- **ARM® Prelocation**
- **Fault Pinpointing (Thumping)**
- **Optional Sectionalizing Software***
- **4 or 12 kV DC testing**

DESCRIPTION

The EZ-THUMP4 and EZ-THUMP12 are compact and lightweight, battery and AC line operated, portable cable fault location systems. They are designed for quick, effective, accurate and safe fault locating operations to greatly reduce system customer outage minutes.

Due to their rugged yet portable enclosure, they are ideally suited either for use in a "satellite" fault locating concept for remote areas that may have less frequent faults, when ease of operation, light weight and economics are important, or for hard to access inner city locations.

The units require no adjustments and are operated via a rotary control knob.

The EZT4/12 series offers:

- Arc Reflection Method (ARM®) cable fault prelocation
- 500 Joule pinpoint surge generator
- DC testing for breakdown detection
- Insulation resistance measurement and sheath testing
- A 4-kV or 12-kV version

APPLICATIONS

HV Testing (proof/insulation testing)

Used to test the dielectric strength of a cable and, if the test fails, to determine the breakdown voltage. For this purpose a test voltage up to 4 kV or 12 kV (model dependent) is applied to the cable under test indicating the resistance value.

Sheath Test and Sheath Fault Location / Unshielded Low Voltage Power Cable Fault Locating

An intact jacket and sheath of a solid dielectric insulated cable is required to avoid ingress of water and subsequent cable faults. With this test, the dielectric strength of the cable jacket is tested by applying a DC voltage of up to 10 kV to the cable sheath (concentric neutral).

Sheath fault location requires the additional item ESG NT Digital ground/ earth fault locator with optional "A" frame. Accurate location of sheath faults is achieved using the step-voltage method: as the fault approaches, the step voltage potential increases, decreasing with reversed polarity after it passes the fault. The change in polarity allows the fault to be located precisely. The identical method with the same equipment can also be used for secondary fault locating on unshielded low voltage power cables.

Fault pre-location

After identifying the type of fault, prelocation of the fault position is determined using ARM. The fault is stabilized by creating a temporary "bridge" to ground/earth. During this condition, a standard TDR measurement is made into what is basically a short circuit fault.

Sectionalizing (Optional)

The sectionalizing mode is used to identify and indicate the location of transformers in a loop or radial system, locating the fault between its 2 closest transformers, which identifies the faulted span.

Pinpoint fault location

Accurate pinpoint fault location is achieved using the "Thunder & Lightning" method whereby the 500 Joule surge generator (thumper) and an acoustic/electromagnetic receiver is used.

FEATURES AND BENEFITS

The EZ-THUMP 4/12 series of portable fault locators combine the following features and benefits in a single device.

- Quick-step and expert modes, especially convenient where operators may not be called upon to use the equipment on a regular basis
- Automatic fault locating procedure
- Operating of unit via rotary control knob
- Automatic end-of-cable and fault detection
- DC testing up to 4 kV or 12 kV (dependent on model) with automatic breakdown detection

- Key switch interlock
- Operation from internal battery or from an ac source
- Rugged, lightweight, high impact resistant IP54 designed enclosure

SPECIFICATIONS

Testing
Output: 0 – 4 kV, 35 mA DC (EZ-THUMP4)
0 – 12 kV, 12 mA DC (EZ-THUMP12)

Prelocation
TDR: Range: 25,000 ft (7.6 km)
Sampling Rate: 100 Mhz
Resolution: 2.5 ft @ 250 ft/*f*s
0.8 m @ 80 m/*f*s
Arc Reflection: 0 – 4 kV or 0 – 12 kV (model dependent)

Pinpoint Fault Location
Surge: 0 - 4 kV @ 500 J (EZT4)
0 – 12 kV @ 500 J (EZT12)
Impulse Sequence: 10 seconds
Single shot

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

Memory
1000 traces

Interface
USB Port

Cables/Terminations
15 ft (4.6 m) HV flexible shielded cable with MC connector and hotline clamp
HV return with hotline clamp
15 ft (4.6 m) ground/earth cable with hotline clamp
6 ft (1.8 m) mains supply lead set (US/SCHUKO/UK)

Supply
Battery: Internal 24 V NiMH Battery 5 AH Approx. 30 mins of surge/thumping Approx. 3 hours recharge time 100-240 VAC – 24 VDC charger with connection lead set (US/SCHUKO/UK)
AC Line: 100 – 230 VAC ±50/60 Hz

Safety
Emergency stop
Key-switch Interlock
Auto "time out"

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

IP Rating
IP54 (with top open)

Weight
71 lbs (32 kgs)

Dimensions
14 x 11 x 21 in. (35.5 x 28 x 53.3 cm)

ORDERING INFORMATION

Order an EZ-Thump configured to your specific needs. To determine the catalog number, fill in the alpha characters with the corresponding numbers from the detailed options. Example: to order a 4-kV EZ-Thump with 15 ft output and ground cables, 14 mm male MC with vise grip cable termination, hand cart and sheath, request catalog number EZT4 - 15 T2 C H

Item	CAT No.
4-kV Portable Fault Location System	EZT4-yyzzSCHM
12-kV Portable Fault Location System	EZT12-yyzzSCHM
Options (must be defined when ordering):	
Cable length designator (yy):	
15 ft (4.6 m) HV output and ground cables	yy = 15
50 ft (15 m) HV output and ground cables	yy = 50
Cable termination designator (zz):	
14 mm male MC with hotline clamp	zz = T1
14 mm male MC with vise grip	zz = T2
Hardwired to battery clamps on HV and "G" clamp to ground (no MC connectors)	zz = T3
10 mm Female MC with battery clamps	zz = T4
Optional designators (omit when not ordered)	
Sectionalizing software	S
*Hand cart prep	C
**Sheath	H
Voltage selection manual	M

Included Accessories	
6 ft (1.8 m) mains supply lead set (US/SCHUKO/UK)	1002-889
Universal battery charger kit (US/SCHUKO/UK)	1002-890
Instruction manual	AVTMEZT4/12
Optional Accessories	
Hand cart for EZT4/12	895000180110000
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	871500500100000
ESG NT digital earth fault locator	871500200200000

*Not available with 50 ft cables
**Sheath fault testing/secondary fault locating

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ISO STATEMENT
Registered to ISO 9001:2008 Cert. no. 110006.01

EZT4/12_DS_EN_V10
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