

SMART THUMP ST16

Portable/Truck Mount Cable Fault Location System



- **Delivers 1500 J at 8/16 kV**
- **16-kV DC high voltage proof test and insulation resistance test**
- **E-TRAY automatic test sequence to proof test, prelocate and pinpoint**
- **Interprets test results for user**
- **5.7 in. Hi-Brite color display**
- **Safety / grounding check (F-OHM)**
- **USB interface**

DESCRIPTION

The SMART THUMP ST16 Portable Cable Fault Locating System provides safe, efficient and extremely easy-to-use solutions for quickly identifying, prelocating and pinpointing various types of cable faults for power cables. The ST16 was developed to meet the requirements for typical low- and medium-voltage distribution cable fault location markets.

Circuit parameters include:

- Circuit voltage up to 35 kV
- Insulation EPR or XLPE
- Typical conductor sizes between #2 and 500 MCM (34 mm² to 250 mm²)
- Typical circuit lengths from a few hundred feet (100 m) up to 5 miles (25,000 ft or 8,000 m)

Typical equipment users include: operations department of power utility companies, electrical departments within municipalities including street light maintenance, private network operators, high voltage electrical contractors, service companies, port authorities, mining, airports, military bases, petrochemical and paper companies.

The ST16 unit incorporates HDW's "E-Tray" technology, a concept that has been already proven in other products (EZ-Thump, EZ-Restore Overdrive, and TDR T3090) and which will be carried forward into any new Megger product in the future. The E-Tray adds the unique capability to access and operate every function through an innovative and intuitive user interface, without the need to make adjustments and the software suggesting the next logical step.

APPLICATIONS

The SMART THUMP ST16 represents a new generation of advanced underground cable fault locating systems that require less training than a traditional thumper-only system. It is the only fault locator with built-in intelligence to interpret the results of the initial test sequence. The "turn & click" rotary button operation lets the user automatically proof test, pre-locate, and pinpoint the fault from one convenient control console. No adjustments are typically required. The unit automatically sets the thump voltage to minimize the stress applied to the cable. The ST16 features an automatic safety check to protect the user from incorrect or faulty ground connections (F-Ohm).

The heavy-duty wheels of the unit are ideal for use in rough terrain. The ST16 is capable of being permanently installed

PORTABLE AND TRUCK MOUNT VERSIO FEATURES AND BENEFITS

This fully integrated system can be operated from either its internal battery/inverter, external 12 VDC or 120/230 VAC. Additional features are:

- "Quick-Steps" is especially convenient where operators may not be called upon to use the equipment on a regular basis
- "Expert Mode" provides up to 20 individual TDR features to the experienced user for optimum fault locating results
- Custom configurable menus for the TDR function
- DC testing up to 16 kV with indication of insulation resistance value
- Rugged, powder coated IP53 designed enclosure
- Safe Op check protects user from incorrect and/or faulty ground connections (F-Ohm)
- E-TRAY operation eliminates lengthy training
- Quick access to all components in case of service

SPECIFICATIONS

Impulse Generator (Thumper)

Operating modes:

Arc Reflection Method (ARM®)	0-8/0-16 kV
ICE surge pulse (optional in North America, standard other countries)	0-8/0-16 kV
Direct surge (Thumping)	0-8/0-16 kV
DC-HV proof test and resistance readout (Ω)	0-8/0-16 kV
Burning / Fault Conditioning	0-8/0-16 kV
Sheath fault test & pinpointing / Secondary Fault Locating (optional)	0-5 kV

TDR

TDR mode and all prelocation functions (25,000 ft, optional 100,000 ft)

Energy Output

Dual stage: 1500 J @ 8 kV and 16 kV
 Proof test: 0 to 16 kV continuous
 Burn current: 60 mA max

Key Features

Single-shot thump in ARM
 Built-in inductive type ARM filter
 8 second thump cycle @ max output
 Automatic cable and system discharging

Display Features

Transflective TFT color display, sunlight proof
 5.7 in., 640 x 470 pixel resolution

Power Options

120/230 V, 60/50 Hz ac operation
 12 V deep cycle marine battery with internal dc charger/inverter (standard)

SMART Features

Entirely automatic test sequences includes proof test, prelocate, and pinpoint
 Automatic interpretation regarding type of fault (i.e. open, burnt in the clear, short)
 Automatic adjustment of thump voltage (user selectable)
 Automatic alphanumeric display of cable and fault distance

USB

Host interface 2.0
 TDR trace export and system upgrades

Mounting and Enclosure

Mounted on heavy-duty wheels (14")
 Rain tight powder coated enclosure IP53 (open)
 (Also available as vehicle-mount unit)

Digital "Analog" Meter

Displayed on LCD screen

Environmental

Operating Temperature: -20C to +50C; -4F to +122F
 Storage Temperature: -25C to +65C; -13F to +149F

IP Rating

IP53 (with top open)

Weight

318 lbs (134 kg) includes wheels, battery and inverter & 50 ft (15 m) of HV / Ground Cable

Dimensions

20 x 46 x 24 in. (500 x 1170 x 600 mm) W x H x D

Optional Accessories , see next page for ordering information for cable reels and racks



1 - Elbow adapter 25 kV 200A Loadbreak	865000200100000	10 - Vise grip with nitted stud	210.VG7R
2 - Elbow adapter 15 kV 200A Loadbreak	865000100100000	11 - Vise grip with 14 mm female MC	210.VG7MC
3 - Elbow adapter 35 kV purple 200A Loadbreak	865000300100000	12 - Vise clamp brass	210.0407 or
4 - Elbow adapter 35 kV Elastimold 200A Loadbreak	865000300200000	or Vise clamp brass with female MC	210.0407MC
5 - Female MC 10 mm with rubber boot	210.MC KB10AR	13 - C clamp brass on mounting plate	210.0406G
6 - Male MC 14 mm with rubber boot	210.MC KST 14AR	14 - Bushing pin connector 15/25 kV with 14 mm female MC	86600020050000B
7 - Female MC 14 mm with rubber boot	210.MC KBT 14AR	15 - Narrow hot line clamp with 14 mm female MC	210.MCLA820
8 - HD battery clamp with 10 mm male MC	210.810001055		
9 - HD battery clamp with 10 mm male MC	210.820003130		

*For other configurations of termination, e.g. 600A Dead Break, please contact factory

ORDERING INFORMATION								
	MOUNT	REMOTE CONTROL	POWER	ST16	MODEL			
					WW	XX	YY	Z
SELECT MOUNTING OPTION	CART	NO	AC / Battery / EXT DC	Cart mounted Unit, Standard ,3 Power Options: AC120/230V 50/60Hz, Internal Battery 12V, External 12VDC	M1			
	TRUCK	NO	AC / EXT DC	Truck Mount Unit AC only / ext. DC option	M2			
	TRUCK	NO	AC ONLY	Truck Mount Unit AC only	M3			
	CART	NO	AC ONLY	Cart mounted Unit AC Only	M4			
	TRUCK	YES	AC ONLY	Truck Mount Unit AC Only / remote control	M5			
	TRUCK	YES	AC / EXT DC	Truck Mount Unit AC Only / remote control / ext. DC option	M6			
	TRUCK	YES	No AC / EXT DC ONLY	Truck Mount Unit / remote control / ext. DC ONLY	M7			
SELECT CABLE LENGTH	12 ft (3.5 m) Custom Cable					12		
	25 ft (7.5 m) Custom Cable					25		
	50 ft (15 m) Standard Cable					50		
	100 ft (30 m) Custom Cable					100		
SELECT CABLE TERMINATION	14 mm Male MC with Hotline Clamps (North America)						T1	
	14 mm Male MC with Vise Grips (North America)						T2	
	Hardwired to Battery Clamps on HV & HV Return, "C" Clamp to Ground, typically UK (No MC Connectors)						T3	
	10 mm Female MC with Battery Clamps (excluding North America)						T4	
SELECT SOFTWARE OPTION (Selection of software option can be any combination)	ICE (Surge Pulse)							I
	Sheath fault testing / Secondary Fault Locating							H
	Sectionalizing Software							S
	Manual voltage Selection							M
Item	Cat No.		Item	Cat No.				
Included Accessories				Optional Accessories				
6 ft (1.8 m) mains supply lead set (US/SCHUKO/UK)	1002-889		Digiphone Plus surge wave receiver	87 1500 500 100000				
Instruction manual AVTMST16	AVTMST16		ESG NT digital earth fault locator	87 1500 200 200000				

Configurator for individual cable reels and cable racks Megger Valley Forge							
Configuration ID							
Choose one from below							
P1 (Single Portable Cable Reel)	↓	↓	↓			↓	↓
P1 (Single Portable Cable Reel)				↓	↓		
P1 (Single Portable Cable Reel)							
P2 (Pair of 2 individual Portable Cable Reels)				↓	↓		
R2 (Stationary Rack with 2 Cable Reels)							
R3 (Stationary Rack with 3 Cable Reels)							
	High Voltage Cable	Length of Cable ft/m	HV Termination	Ground Cable	Length of Cable ft/m	AC Line Cord 120/230V	Length of Cable ft/m
	Rated 50kV DC EPR						
	ID Letter H	ID Letter = Length (ft)	ID Letter = T1, T4, PFL	ID Letter G	ID Letter = Length (ft)	ID Letter A	ID Letter = Length (ft)
		50ft (15m)	T1		50ft (15m)		50ft (15m)
		85ft (25m)	T4		85ft (25m))		85ft (25m)
		130ft (40m)	PFL		130ft (40m)		130ft (40m)
Example R3	H	85	T4	G	85	A	85
This identifies a cable rack with 3 reels, a HV reel with 85ft (25m) with T4 Terminations, a ground cable reel with 85ft (25m) and an AC line reel with 85ft (25m)							

SALES OFFICE
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ST16_DS_EN_V06
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 ISO 9001
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