



Datasheet



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SMART THUMP ST16

Portable Cable Fault Location System



- **Delivers 1500 J at 8/16 kV**
- **16-kV DC high voltage proof test and insulation resistance test**
- **Easy Go automatic test sequence to proof test, prelocate and pinpoint**
- **Interprets test results for user**
- **5.7 in. transfective color display**
- **Safety / grounding check**
- **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:

- System 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 3 miles (17,000 ft or 5,000 m)

Typical end 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 new Megger products 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 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 in a vehicle (truck mount version).

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 IP54 designed enclosure
- Safe Op check protects user from incorrect or faulty and ground connections (F-Ohm)
- Easy Go 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)	
Burning / Fault Conditioning	0-8/0-16 kV
Sheath fault test & pinpointing /	
Secondary Fault Locating (optional)	0-5/10 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 (uses 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 IP54 (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

IP54 (with top open)

Weight

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

Dimensions

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

ORDERING INFORMATION							
MODEL	ST16	--	WW	XX	YY	Z	
SELECT MOUNTING OPTION	Cart Mount		M1				
	Vehicle Mount with Inverter		M2				
	Vehicle Mount w/o Inverter/Battery (AC only)		M3				
	Cart Mount AC Only		M4				
	Remote interface, available only with vehicle mount		M5				
SELECT CABLE LENGTH	12 ft Custom Cable			12			
	25 ft Custom Cable			25			
	50 ft Standard Cable			50			
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 & "G" Clamp to Ground (No MC Connectos)				T3		
	10 mm Female MC with Battery Clamps (excluding North America)				T4		
***SELECT SOFTWARE OPTION	ICE (Surge Pulse)					I	
	Sheath fault testing / Secondary Fault Locating					H	
	Sectionalizing Software					S	
	Manual voltage Selection					M	
***Selection of software option can be any combination							
Item		Cat No.		Item		Cat No.	
Included Accessories							
6 ft (1.8 m) mains supply lead set (US/SCHUKO/UK)		1002-889		Cable racks and reels - terminations typical in markets North America and Mexico **			
Instruction manual		AVTMST16		C401 Cable rack system, HV 50kV, 230Vac mains, GND cable, 125 ft each		1003-916	
Optional Accessories							
15-kV elbow 14 mm female MC connector		865000100100000		C403 Cable rack system, HV 50kV, GND cable, 125 ft each		1003-917	
25-kV elbow 14 mm female MC connector		865000200100000		C403HT Cable rack system, HV 50kV, GND cable, 125 ft each, mounted on 15" wheel hand cart		1003-918	
35-kV Elbow 14 mm female MC connector		865000300100000		C403-150 Cable rack system, HV 50kV, GND cable, 150 ft each		1003-919	
Digiphone Plus surge wave receiver		871500500100000		C403P Set of 2 individual hand reels (HV and GND), 125 ft each		1003-920	
ESG NT digital earth fault locator		871500200200000		** Standard Rest-of-world terminations on cable reels:			
Cable racks and reels - terminations typical in North America and Mexico *							
C401 Cable rack system, HV 50kV, 115Vac mains, GND cable, 125 ft each		864000100100000		HV output cable: 10mm female MC, w/ battery clamp HV Return (far end): 10 mm female MC, w/ battery clamp Cable reel HV input: 10mm male MC HV Return: 10 mm male MC			
C403 Cable rack system, HV 50kV, GND cable, 125 ft each		864000200100000					
C403HT Cable rack system, HV 50kV, GND cable, 125 ft each, mounted on 15" wheel hand cart		864000200200000					
C403-150 Cable rack system, HV 50kV, GND cable, 150 ft each		864000200300000					
C403P Set of 2 individual hand reels (HV and GND), 125 ft each		864002002500000					
* Standard North America and Mexico terminations on cable reels:							
HV output cable: 14mm male MC , Cable reel HV input: 14mm female MC HV Return: Open spade lug (hook)							

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

ST16_DS_EN_V02
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LOCATIONS

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