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. transflective 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) 0-8/0-16 kV
- 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: -20°C to +50°C; -4°F to +122°F
- Storage Temperature: -25°C to +65°C; -13°F to +149°F

**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

<table>
<thead>
<tr>
<th>MODEL</th>
<th>ST16</th>
<th>WW XX YY Z</th>
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</thead>
<tbody>
<tr>
<td>SELECT MOUNTING OPTION</td>
<td>Cart Mount</td>
<td>M1</td>
</tr>
<tr>
<td></td>
<td>Vehicle Mount with Inverter</td>
<td>M2</td>
</tr>
<tr>
<td></td>
<td>Vehicle Mount w/o Inverter/Battery (AC only)</td>
<td>M3</td>
</tr>
<tr>
<td></td>
<td>Cart Mount AC Only</td>
<td>M4</td>
</tr>
<tr>
<td></td>
<td>Remote interface, available only with vehicle mount</td>
<td>M5</td>
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</table>

| 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 Connectors) | 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

<table>
<thead>
<tr>
<th>Item</th>
<th>Cat No.</th>
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<tbody>
<tr>
<td><strong>Included Accessories</strong></td>
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<tr>
<td>6 ft (1.8 m) mains supply lead set (US/SCHUKO/UK)</td>
<td>1002-889</td>
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<tr>
<td>Instruction manual</td>
<td>AVTMST16</td>
</tr>
<tr>
<td><strong>Optional Accessories</strong></td>
<td></td>
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<tr>
<td>15-kV elbow 14 mm female MC connector</td>
<td>865000100100000</td>
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<tr>
<td>25-kV elbow 14 mm female MC connector</td>
<td>865000200100000</td>
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<tr>
<td>35-kV Elbow 14 mm female MC connector</td>
<td>865000300100000</td>
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<tr>
<td>Digiphone Plus surge wave receiver</td>
<td>871500500100000</td>
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<tr>
<td>ESG NT digital earth fault locator</td>
<td>871500200200000</td>
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<tr>
<td><strong>Cable racks and reels - terminations typical in North America and Mexico</strong></td>
<td></td>
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<tr>
<td>C401 Cable rack system, HV 50kV, 115Vac mains, GND cable, 125 ft each</td>
<td>864000100100000</td>
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<tr>
<td>C403 Cable rack system, HV 50kV, GND cable, 125 ft each</td>
<td>864000100300000</td>
</tr>
<tr>
<td>C403HT Cable rack system, HV 50kV, GND cable, 125 ft each, mounted on 15” wheel hand cart</td>
<td>864000200300000</td>
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<tr>
<td>C403P Set of 2 individual hand reels (HV and GND), 125 ft each</td>
<td>864002002500000</td>
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**Standard North America and Mexico terminations on cable reels:
- HV output cable: 14mm male MC, w/ battery clamp
- HV Return (far end): 10 mm female MC, w/ battery clamp
- Cable reel HV input: 10 mm male MC
- HV Return: 10 mm male MC**