STANDARD PENETRATION TEST
HAMMER ENERGY MEASUREMENT APPARATUS

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When Accurate Measurement Matters...

The Standard Penetration Test - Hammer Energy Measurement Apparatus (SPT - HEMA) is a Measurement Apparatus consisting of instrumented rods incorporated with force, acceleration sensors and Data recording cum Processing unit. It measures the Energy Transferred by SPT Hammers below Anvil and above Split Spoon sampler.

SPT - HEMA is essentially a battery-operated portable system comprising of Instrumented rods, Signal conditioners, Power supply, SBC, High speed DAQ with customized Software for conducting field test, Data processing and Post analysis.

INSTRUMENTED ROD

Standard supply consists of two numbers of custom engineered Instrumented rods fitted with Accelerometers and foil type Strain gages for measurement of Acceleration and Forces during the test.

These instrumented rods are typically inserted in the drill string just below the Anvil (Above the ground surface) & just above the Split spoon sampler (Below the ground surface) and the relevant connections are established with the SPT - HEMA.

The high speed DAQ records the Force and Acceleration signals during the test and displays the derived parameters such as Applied Energy, Displacement, Transfer Energy in %, Theoretical Energy etc. post detailed analysis of the recorded data.

FEATURES

• Recording capability, 4 channels of Load and Acceleration • High speed data acquisition system • Built in signal conditioner for all four channels • Internal zero balancing through mechanical potentiometers • Battery level indication through LED bar graph display • External battery charger with over charge protection

SPECIFICATIONS

CPU	:	*Atom processor, 1.8GHz*	*GUI*	:	*7" LCD touch screen*
Operating system	:	*Microsoft Windows 7 Pro*	*Display resolution*	:	*1024 x 768*
RAM	:	*4 GB*	*Rechargeable Battery*	:	*Built in Li Polymer Ion12 VDC, 25 Ah*
HDD	:	*120 GB, SSD*	*Battery back'up*	:	*4 to 6 Hours (Typical)*
USB Ports	:	*4*	*Temperature*	:	*10 to 50 °C*
Signal conditioner	:	*4 (2 Load & 2 Acceleration)*	*Analyser Size*	:	*306 H x 350 W x 120 D mm*
Filter	:	*5 KHz LPF for both channels*	*Analyser Weight*	:	*9.25 Kg*
ADC	:	*16 Bit, 250 KS/s*			
Record Time	:	*1 to 5 Min*			
Basic accuracy	:	*+/– 2% of FSR*			

Designed & Developed in Consultation
with Indian Institute of Science
Dept. of Civil Engineering.
Bengaluru - 560 012.

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INSTRUMENTED ROD

- Acceleration (2 Channel) : 10000g
- Force (2 Channel) : 24Tonne
- Length : 350mm
- Diameter : 85mm
- Weight : 4.75 Kg
- IP rating : IP65

SOFTWARE FEATURES

User friendly GUI

Extensive site input data

Deployment Options for 1 or 2 Instrumented rod

High speed data acquisition

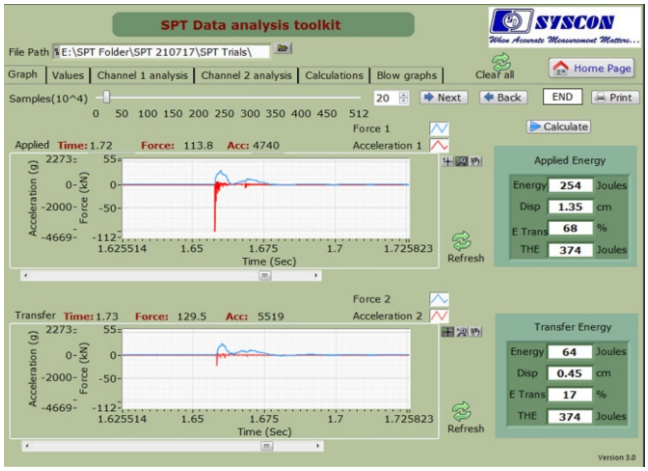
On line status display

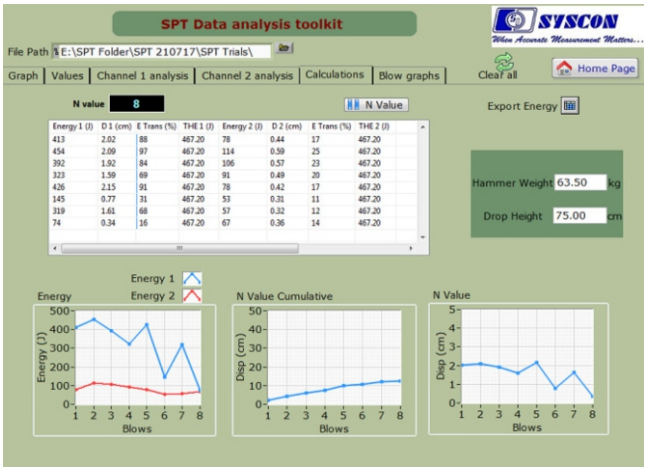
Automated Quick Look data

Extensive report generation

Extensive Offline analysis

Direct export to .CSV format





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