

NON-DESTRUCTIVE TESTING INSTRUMENT ALL-IN ONE

Non-destructive testing instrument All-in One: a single acquisition unit that allows, through the purchase of several specific "Kit", to perform sonic and ultrasonic tests for the characterization in situ and in the laboratory of materials such as concrete, masonry and stone materials, "cross hole", "PIT" (Pile Integrity Test) in piles and diaphragm foundations and calculation of the axial force in tie rods.

All-in One system is a rugged and reliable equipment with various dedicated piezoelectric sensors and probes. All-in One is characterized by an A/D board multichannel and selectable sampling rates from 10KHz to 6.25MHz (up to 12.5MHz single channel). All acquired signals are displayed, computed and memorized directly by the supplied software. Practical user interface on Tablet (or PC) with wireless Wi-Fi and USB connection

APPLICATIONS

- Characterization of concrete and stone materials on site and in the laboratory
- Analysis of concrete piles and diaphragms with cross-hole method
- Analysis of piles with echometric method and mechanical admittance
- Calculation of the axial force in tie rods.

NON-DESTRUCTIVE TESTING INSTRUMENT ALL-IN ONE

TECHNICAL CHARACTERISTICS

Channel	2 inputs simultaneous sampling / 2 outputs for ultrasonic transmitter
Converter type	2 channels 12bit A/D converter
Input type	Differential / Single ended / IEPE
Input range	+/- 5 Vpp
Amplification	gain 1 to 40000 software selectable
Pretrigger	selectable, 0 - 20000 samples 1Ch; 0 - 10000 samples
Sample rate	10KHz to 12.5 MHz (12.5MHz/1Ch - 6.25MHz/2Ch)
Sample per event	up to 100K samples for each channel
Time resolution	80 ns
Effective resolution	12 bit@12.5MHz, 14bit@ 100KHz (with oversampling)
Bandwidth	> 1 MHz typ @ gain 10
Filter	antialias, digital filter selectable with dedicated DSP
Trigger	hardware, software, threshold (selectable)
Transmitter drive voltage	100V to 1200V
Pulse duration Selectable	1 to 65000 μ s
Transmitter pulse repetition	> 20 meas/s (according to sample rate)
Communication	WiFi 802.11 (100m), USB
Power supply	Internal battery LiFePO4 (4,5Ah)
Recharging	External charger - recharging time 4h
Consumption	1,8W Stand-by/ 2.8W with ultrasonic transducer active
Autonomy	> 35 hour standBy/ 20 working hours
Case	IP 65
Working temperature	0-60°C
Size and weight	LxWxH 320x212x96mm, weight 2,5 kg

TRANSDUCER

Probes for cross hole test	transmitter/receiver/dual function. Operating frequency: 80kHz. Diameter 28mm; Length 150 mm
Probes for contact tests	Receiver frequency: 55KHz Transmitter frequency (standard model): 55 kHz. Transmitter frequency (optional model): 20 kHz
Probes for tests on piles	Hammer with accelerometer: 1-10 KHz bandwidth, Sensitivity: 1mV/g. Accelerometer: 1-10 KHz bandwidth, 100mV/g sensitivity

KIT CONTACT

(for ultrasonic contact measurement)

- According to Standard: UNI EN 12504-4, ASTM D2845-08 and ASTM C597-02.
- Highly sensitive active piezoelectric receivers with measurements frequency of 55 kHz or 20 kHz
- Possibility of use on wood samples with dedicated accessories.
- The kit can be equipped with an instrumented hammer

KIT PIT (Pile Integrity Testing)

- According to Standard: ASTM D5882-16.
- Kit consisting of an instrumented hammer with accelerometer and accelerometer receiver.
- Analysis with echometric method and mechanical admittance
- Solgeo software "PPS" included.

KIT MCHA

(Ultrasonic Cross-Hole Testing)

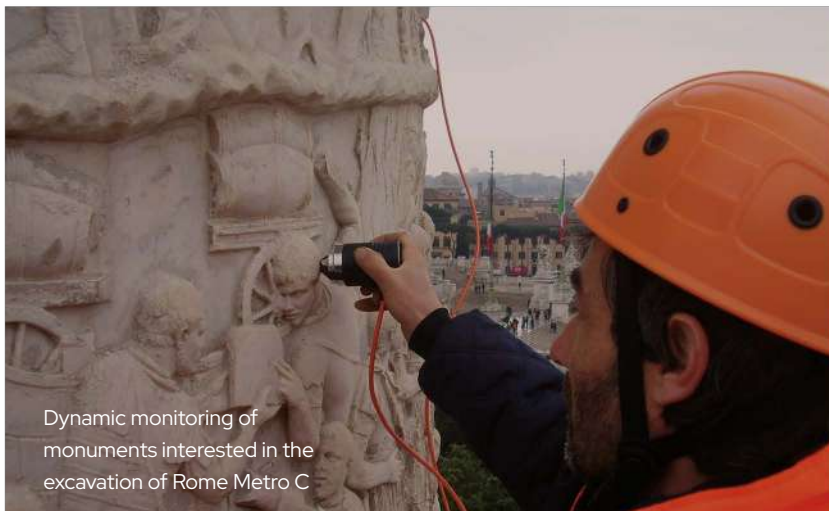
- According to standard guideline: ASTM D6760-16
- Simultaneously cross-hole measurements along three paths in pile foundation.
- Automatic depth measurement and synchronization of acquisitions via encoder.
- Result available on the screen directly at the end of the test
- High power transmitter and high sensitive active-type piezoelectric receivers (standard 80kHz, 50 kHz on request).



KIT CONTACT
55KHz ultrasonic transducers, with push-button control for automatic signal recording



Accessories KIT All-in-One:
- Instrumented hammer with accelerometer for sonic investigations for thicknesses greater than 2m
- 20kHz transducer for thicknesses over 1m or for all situations where standard transducers are not sufficient
- Punch for sonic investigations for high thicknesses



Dynamic monitoring of monuments interested in the excavation of Rome Metro C



KIT PIT consisting of an instrumented hammer with accelerometer and accelerometric receiver

KIT SoITiRo for tie rods force calculation

- Allows to calculate the axial force in tie rods. through vibration analysis
- Uses the same sensors as the PIT Kit.
- Automatic calculation of the axial force by entering the physical characteristics of the tie rod.

KIT MCHA consisting of probes 80kHz (optionally 50kHz) with cable reel up to 100m



KIT MCHA encoder with LED signal for excessive winding speed and push-button control panel



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