

Digital RI-CPT

Digital Radio-Isotope Cone Penetration Test system



Features

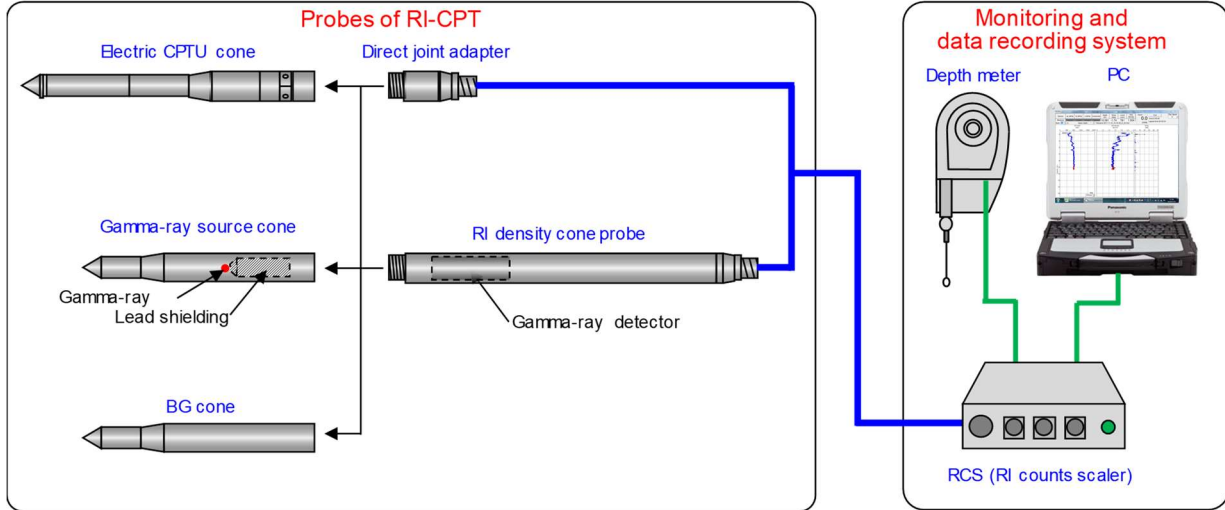
- Digital RI-CPT system is an electric cone penetration test (CPTU) that can measure the density distribution profile of subsurface soil mass by an on board 24bit ADC.
- It has lower noise and a simpler system than conventional analog RI-CPT, because entirely digital data is transferred by Control Area Network (CAN).
- Its density measurement can achieve much better precision than that of mechanical sampling.
- Digital RI-CPT system is applicable onshore and offshore.

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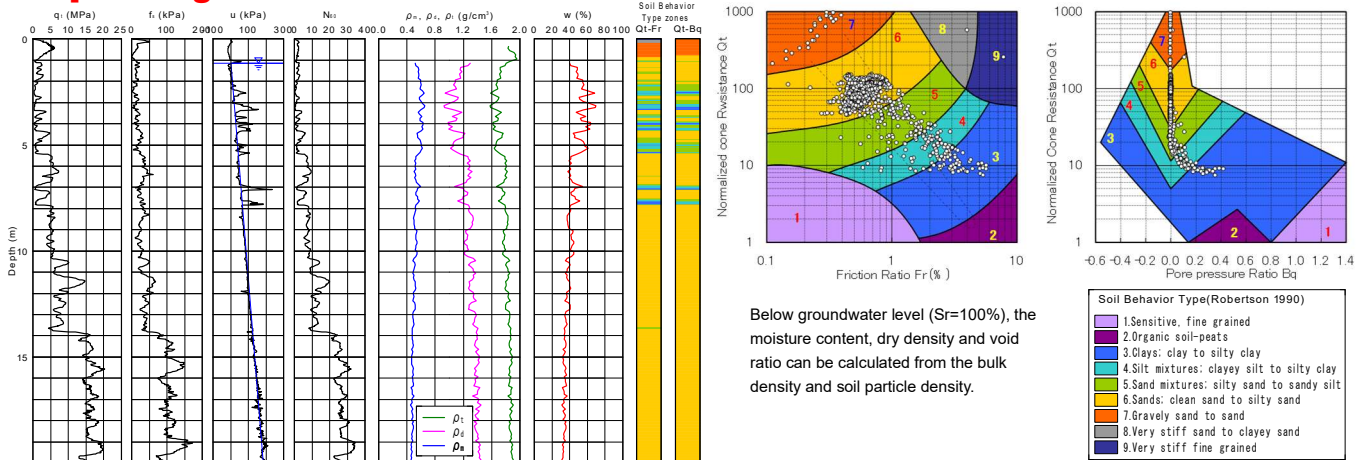
Introduction

Digital RI-CPT system can measure the conventional CPTU log (tip resistance(q_c), sleeve friction(f_s) and pore pressure(u)) together with the density distribution profile. The RI (Radio-Isotope) based technique (Nuclear method) is used to realize the continuous and virtually non-destructive detection of density in the subsurface soil mass. Digital RI-CPT's density measurement can achieve much better precision than that of mechanical sampling of the undisturbed specimen, thus provides us with the high-quality density distribution profiles not only in the clay strata but also in the sand deposit. Further, Digital RI-CPT system has lower noise and a simpler system than conventional analog RI-CPT system, because entirely digital data is transferred by Control Area Network (CAN).

Component of Digital RI-CPT system



Sample of Digital RI-CPT results



Specifications

Probe name	Electric CPTU cone					RI density probe
Model No.	SR-3EIP-DIG-DP1					SRD-1DP-DIG-DP1
Radiation source	---					Cesium 137 ¹³⁷ Cs 3.7MBq
Sensor	Cone resistance q_c	Sleeve friction f_s	Pore pressure u	Inclinometer (3-axis acceleration sensor)	Temperature	NaI(Tl) Scintillation counter
Range	30MPa	1,000kPa	1,000kPa	0 to 180° from Vertical	0 to 50°C	Bulk density ρ_t 1.0 to 2.3g/cm ³
Dimensions	dia. 35.7mm(Friction cutter : dia. 48.6mm) Length 750mm (with direct joint adapter), 1,200mm (with RI density probe)					dia. 48.6mm length 1,100mm
Operating temperature	0 to 50°C					
Waterproof	IP68 (Water resistant 1MPa)					
Power Supply	DC 12V					

●The content of this leaflet is as of May 2018. ●Product specifications may be subject to change. ●Colors may differ slightly for printing.