

High Sensitivity Settlement System



Applications

The automatic High sensitivity settlement system consists of a series of measuring vessels filled in part of liquid connected by a hydraulic line. The measuring principle is communicating vessels, the failure of a measuring vessels determines the redistribution of the liquid in the tanks, measuring sensors detect changes that correspond to failure.

It is used in the following structures:

- Civil and monumental
- Bridges and Viaducts
- Diaphragms and retaining walls
- Dams and Tunnels

Technical features

The system consists of a set of measuring vessels, each housed inside a box of hermetic protection of stainless steel; are housed inside the tank for the liquid, a hydraulic circuit and the internal electric transducer for measuring the liquid level inside the vessel. An optional temperature sensor allows you to evaluate the thermal effect on the structure and on the sensor. The vessels are connected by an hydraulic circuit composed of a polyethylene pipe and an external pipe insulation. The hydraulic and electrical cable instrumental that realizes the connection of the instrument to the readout unit complete tool. The measurements are recorded by the readout unit or by a datalogger (recommended). With the management of the measures automatically OTR has a specific software that allows the data recorded in real time with management thresholds alert.

Uses


- Control of subsidence of civil and monumental structures
- Monitoring of subsidence of structures in the vicinity of underground excavations and earthworks
- Monitoring of subsidence in concrete dams, bridges and viaducts
- Monitoring of differential settlement of foundations

OTR srl
Organizzazione Tecnici Riuniti

Via Btg. Susa, 36 – 29122 Piacenza
Tel: +39 0523 594290 – Fax: +39 0523 607512
info@otr-geo.it – www.otr-geo.it – P.IVA/CF 00894610153



Technical specifications

Code	O00TAZ00000
	
Type of sensor	Load cell
Range	+/- 40 mm
Sensibility	0.01 mm
Sensor accuracy	+/- 0.1 mm (excluding thermal effects)
Power supply	12-24 Vdc
Output signal	mV/V o 4-20 mA (on request)
Temperature sensor (optional)	Termistor NTC3K or PT100
Dimension encloser	360x340x165 mm
Material	Stainless steel
Container seal, aluminum tank and hydraulic hose with fittings	

Accessories

Code	
OTUTAZ00012	Hydraulic hose polyethylene 10/12 mm
OTUTAZCOIB0	Pipe insulation thickness 6 mm
OTAZLIQUI00	Mixture 50% water 50% glycerin
OTAZ0ACC000	Steel cable ties and fixing bolts for settlement system circuit
OCABLE00001	Cable 3x2x0.35 polyurethane sheath section 8 mm

Software

OTR provides the datalogger software that allows to set (via USB-serial) all parameters of the system, engineering sensor data with output in physical units, setting alarms for each channel, data transmission via GSM / GPRS, setting clock with delayed start of the first acquisition, pre-ignition, direct reading, numbers, SMS alert, FTP site, APN, passwords etc.). In OTR option provides the Web server **Myotr** for Hosting and data management.

Details



Installation settlement tank