Monitor with Confidence

TEL 604 540 1100
info@rstinstruments.com
www.rstinstruments.com

RST Instruments Ltd.
11545 Kingston St.,
Maple Ridge, BC V2X 0Z5 Canada

ISO 9001

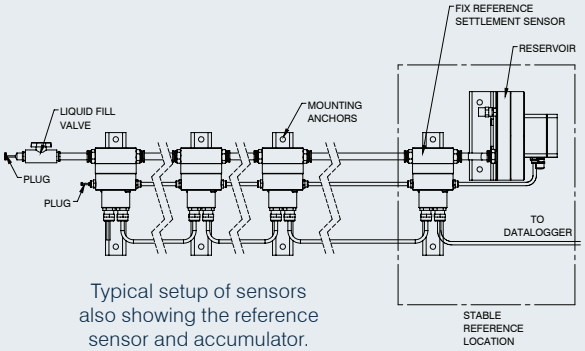
PRODUCT CATEGORY:
SETTLEMENT SYSTEMS

Precision Liquid Settlement Array

The Precision Liquid Settlement Array provides reliable, wireless, real-time remote monitoring of settlement and heave which may occur at excavation sites, tunneling projects, underground openings and related applications. It is ideal for monitoring under fills, preloads, embankments and grouting near structures. Users have real-time access through an internet connection on a PC and can also receive updates through email at chosen intervals, when used with an RST data logger.

The system is comprised of a sensor connected to a pressure & air compensation tube and an electrical cable. Three settlement measuring ranges (0.6, 1.8 or 3 m) are available for ordering and are chosen based on site conditions and anticipated settlement by the site engineer.

Settlement is measured by comparing the changes in liquid pressure between the sensor at the zone of interest, and to the reference sensor. All measured data is digitally received and automatically temperature compensated.



Typical setup of sensors also showing the reference sensor and accumulator.

> APPLICATIONS

Where reliable, real-time monitoring of settlement and heave is required.	
Settlement monitoring under fills, preloads, and embankments.	Settlement and rebound associated with tunneling and relate underground openings.
Bottom heave in excavations.	Heave as a result of grouting.

> FEATURES

Remote access to data - in real-time (when used with RST data logger).	Compact and rugged design.
Tubing for liquid limits oxygen diffusion into fluid line, resulting in high quality data over time with minimal maintenance.	
Simplicity of operation and installation.	Low cost.

SPECIFICATIONS

ITEM	SPECIFICATION
Measuring Ranges	0.6, 1.8 and 3.0 m
Maximum Error (over full temperature and pressure range*)	1 mm - for 'SS5010' at 0.6 m range (contact RST for additional error values)
Supply Voltage	7 - 15 Volt
Temperature Range	-40°C to +50°C
Mounting Plate	Aluminum
Housing	Aluminum
Pressure Lines	XLPE/LDPE
Digital Data Cable	4-wire (4 x 1 mm^2)
Tubing - for liquid	12.7 O.D.; 8.6 I.D. mm
Tubing - for air	6.3 O.D.; 4.5 I.D. mm
Sensor Body Dimensions (excluding glands & tube ports)	Ø 76.2 x 111 H mm
Sensor Weight	1 kg
Mounting Plate Size	38 W x 6.3 D x 229 H mm
Mounting Plate Weight	106 g
Long Term Stability	≤ ±0.1% FSO/year

*Sensors are calibrated over full temperature and pressure ranges for 24 hours at time of manufacturing.
*Calibration results can be viewed on the calibration sheet that will ship with your system.

ORDERING INFO

ITEM	PART #
Precision Liquid Settlement Array - 0.6 m range	SS5010
Precision Liquid Settlement Array - 1.8 m range	SS5020
Precision Liquid Settlement Array - 3.0 m range	SS5030
Fluid Reservoir	SS5100
Tubing - for liquid	SS5200
Tubing - for air	SS5300
Cable	EL380004
De-aired, 50/50 water/glycol mixture (1 L)	SSSP105M

RST Instruments Ltd. reserves the right to change specifications without notice. SSB0016F