

# Hydrostatic Settlement System

## Description

The Hydrostatic Settlement System provides automated settlement and/or heave measurement profiles.

The system comprises an hydraulically charged foil lined Poly Ethylene tube with pressure sensors positioned at 1m intervals. Differential pressure equates to differential elevation, providing a settlement/ heave profile.

The sensors communicate over an RS-485 bus allowing a single output cable and can be read by most RS-485 compatible data loggers.

The system is designed with construction conditions in mind; rugged, quick and easy to install and read, and engineered to minimise risk as far as worker safety, environmental impact and long-term performance are concerned.

## Features

- Automated settlement/ heave monitoring
- 1m spatial resolution
- No cumulative error
- Can be retro-fit in existing profile access tubing
- Lightweight for easy installation
- Ultra-rugged
- Organic hydraulic fluid—reduced environmental impact risk
- RS-485 communications—broad compatibility



## Applications

- Road/ rail embankments
- Tailings dams
- Bridges & bridge abutments
- Ground remediation
- Embankment dams
- Concrete slabs
- Tunnels

The Osprey Measurement Systems HSS comes as a 1m diameter coil and can be supplied on, or placed on a feed reel.

The HSS can be installed within an access tube, directly buried, cast within concrete or grout or mounted to a structure with brackets.

When installed within an access tube or mounted with brackets the HSS can be removed and reused on future projects.

The system comes with 15m heavy duty cable which can be cut or extended as required.

The foil lined PE tube prevents any permeation of gas or liquid in or out of the tube. This ensures the long-term performance of the system and allows the system to be installed in sensitive hydrogeology or contaminated areas.



The Hydrostatic Settlement System was developed in collaboration with University College London. Osprey Measurement Systems products are manufactured in the UK under our ISO 9001:2015 accredited quality management system.

# Specifications

## Physical Specifications

Outer Diameter	32mm
Length	25m, 50m
Tube material	Multi-layered PE, Aluminium
End caps	Stainless Steel 417
Cable Jacket	PU, 6mm OD
Cable conductors	6 x 7/0.20
Hydraulic Fluid	Water/ Glycerol Mix
Pressure Rating	2000kPa
Temperature Tolerance	-10°C–50°C

## Electrical Specification

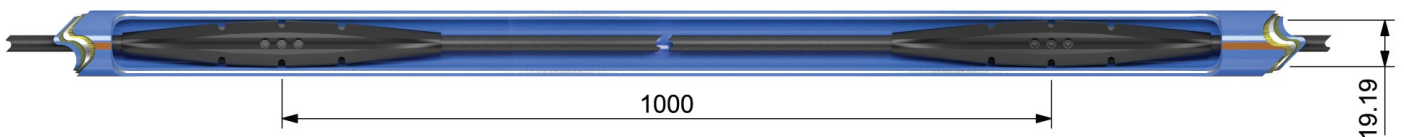
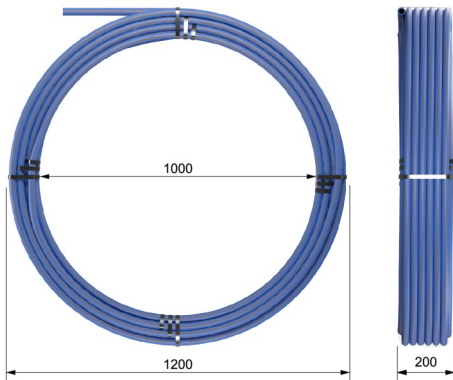
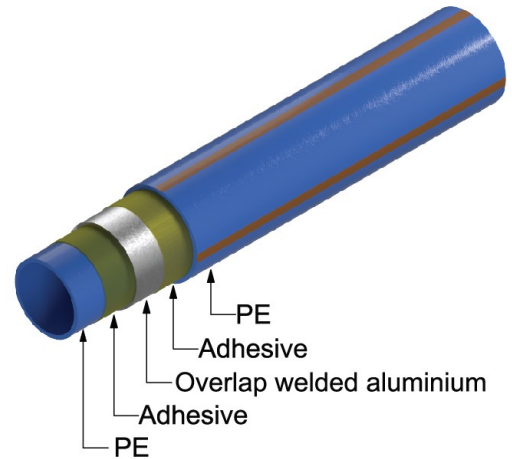
Excitation voltage	5-30V
Active power draw	5W
Integration time	3 seconds
Comms	
Physical	RS485
BUS Protocol	Osprey ASCII

## Performance Specifications

Spatial Resolution	1m
Spatial accuracy	±5mm
Settlement resolution	0.1mm
Settlement accuracy	±5mm
Max differential elevation	8m

## Ordering Information

HSS-01-25	25m HSS
HSS-01-50	50m HSS
HSS-CAB-25	25m Cable Extension
HSS-ACC-R	Braked Feed Reel



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