

S17 DIGITAL HYDROSTATIC PROFILE GAUGE

Datasheet S17



**Description**

The Digital Hydrostatic Profile Gauge is used to monitor the profile of settlement or heave and is predominately used for monitoring beneath embankments or structures where access to the surface is not possible.

The system comprises a probe assembly, attached to a nylon tube containing a hydraulic solution, which connects to a reel/hub assembly.

The reel contains a precision hydrostatic pressure sensor, power supply, analogue to digital converter and a Bluetooth transmitter. Data is transferred via a wireless link from the cable reel to the Field PC and saved each time a reading is taken.

Wireless connection between the instrument and the Field PC makes taking readings fast and simple.

**Features**

- Provides a settlement monitoring profile
- Bluetooth connection between cable reel and Field PC
- Single ended access
- Enhanced, easy interface software compatible with most office systems and applications
- Repeatable position control using metal markers
- Large data storage capacity
- Provides full data security

**Benefits**

- No field connections required
- Uses low cost access tubing
- Cost effective over many profile measurements
- Portable system
- No need for special borehole casing (such as inclinometer casing)
- Easy to use



Comprehensive information about this product and our full range is available at [www.soilinstruments.com](http://www.soilinstruments.com)  
If you would like to speak with someone directly please call +44 (0)1825 765044 or email [sales@soilinstruments.com](mailto:sales@soilinstruments.com)

## Operation

The Digital Hydrostatic Profile Gauge is positioned on the concrete block or reference datum pin.

The probe is pulled along the borehole and is positioned using physical markers on the connecting tubing.

The Field PC software guides the user to position the probe at each one metre marker interval; these are marked and numbered on the tubing. At each interval, the user initiates a reading which records the pressure differential at that point between the reel and the probe. This reading is transmitted from the cable reel to the Field PC via a wireless link.

The probe is datumed at an external topographic reference point for each profile. As the distance position of the probe is known from the markers, subsequent profiles can determine the delta pressure at each given point. From this information, the change in elevation of each point along the profile can be measured.

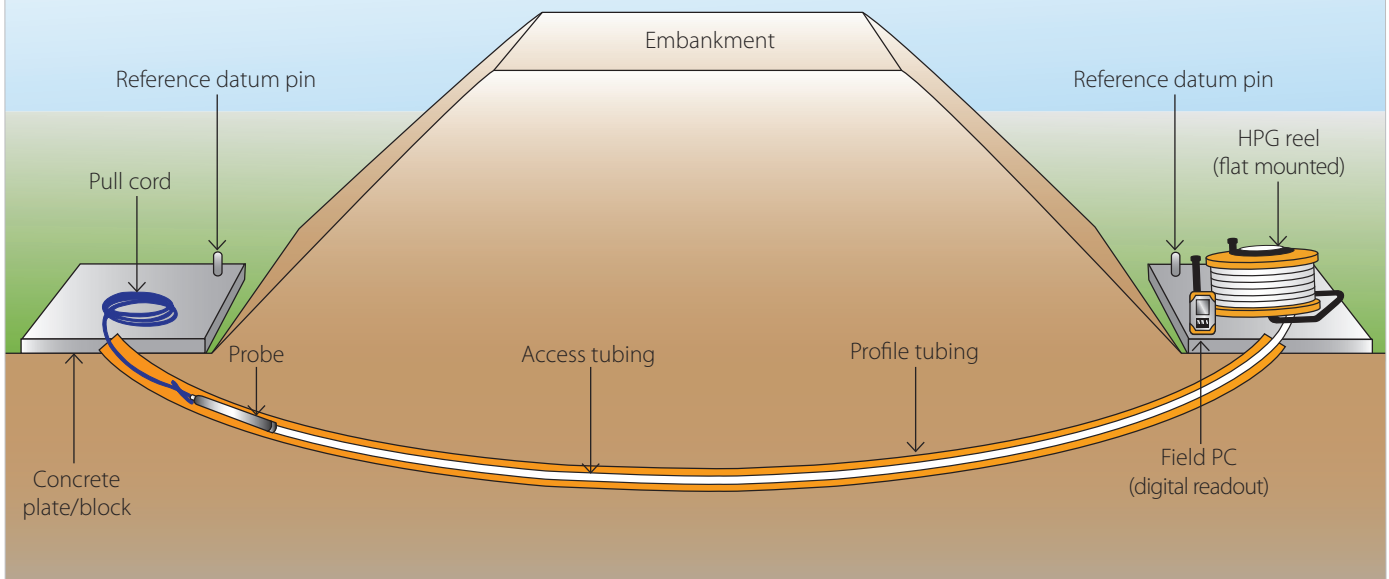
## Applications

The Digital Hydrostatic Profile Gauge is used to monitor the profile of settlement or heave and is beneath embankments or structures where access to the surface is not possible.

Typical monitoring applications include:

- Vertical displacements beneath storage tanks
- Bridges and dams
- Highway embankment construction
- Settlement of landfill
- Railway embankments
- Settlement beneath structures

## Typical Digital Hydrostatic Profile Gauge Installation in Embankment



### THE TECHNICAL RATING FOR THIS PRODUCT:

**INTERMEDIATE**



As the correct installation of any monitoring sensor or system is vital to maximise performance and accuracy, Soil Instruments makes the following recommendations, for the skill level of the installation contractor.

#### ADDITIONAL SUPPORT

We offer installation and monitoring services to support this system. For more information please email : [sales@soilinstruments.com](mailto:sales@soilinstruments.com) or call : **+44 (0) 1825 765044**

**ADVANCED**



The installer is trained and experienced in the installation of this type of instrument or systems, and is ideally a specialist Instrumentation and Monitoring contractor.

**INTERMEDIATE**



The installer already has previous experience and/or training in the installation of this instrument or system.

**BASIC**



As a minimum the installer has read and fully comprehends the manual, and if possible has observed these instruments or systems being installed by others.

## Specifications

### Digital Hydrostatic Profile Gauge

Range <sup>1</sup>	+1m to -3.5m
Resolution	1mm
Accuracy	±10mm
Repeatability <sup>2</sup>	±10mm
Operating temperature	-10 to +50°C

### Tubing

Tube lengths <sup>3</sup>	50m   100m   200m
Tube diameter	12mm
Graduation interval	1m
Graduation marker material	Stainless Steel

### Probe

Length	360mm
Diameter	28.5mm
Material	Stainless Steel

### Reel

Tubing length	50m	100m	200m
Weight	17Kg	25Kg	36Kg
Dimensions	540mm x 460mm x 330mm	540mm x 460mm x 330mm	540mm x 460mm x 480mm

### Field PC

Display	4.3", Illumiview®, high visibility
Connectivity	Bluetooth® 2.1, Wi-Fi®
Dimensions	184 x 91 x 38mm
Weight	590g
Camera	5 MP
Operating Temperature	-30 to +60°C
Battery Life	Up to 20 hours
Ingress Protection	IP68
Tested to	MIL-STD-810G
Included software	Office Mobile® 2010, 'In-Port'
Ports	RS 232C, USB Host (Full A), USB Client (Micro B), 3.5mm Audio

### Profile Tubing

Tube lengths	25m   50m   100m
Tube diameter	50mm OD

### Key Fob (Remote Handheld Activator)

Dimensions	65mm x 35mm x 15mm
Weight	26g
Battery	1 x GP23A

<sup>1</sup> Other ranges available

<sup>2</sup> Dependent on operator experience

<sup>3</sup> Other lengths available

## Ordering Information

### Digital Hydrostatic Profile Gauge

Range: +1metre to -3.5metre depth. Includes: probe, tube, reel & charger, cable gate, key fob, Field PC & charger, Field PC drypack and double-life Field PC battery

S17-1.3	50metre length system
S17-1.1	100metre length system
S17-1.2	200metre length system

### Profile Tubing and Fittings

S17-4.1	Profile tubing; 50mm OD, 25m, 50m or 100m length reels, priced per metre
S17-4.2	End cap; to fit 48.5mm OD tubing
S17-4.3	Profile tube repair coupling; for joining profile tubing S17-4.1 with 50mm OD
S17-4.4	Pulley box unit; used with pull cord E2-3.6 and profile tubing S17-4.1
S17-4.5	Reference survey pin
E2-2.13	Protective cover; 2inch BSP threaded cap; 50mm ID, 500mm length
E2-2.14	Security cover; with bar and padlock; 50mm OD, 500mm length
E2-3.6	Pull cord; priced per 100m, 4mm OD

### Manual

MAN-203	Digital Hydrostatic Profile Gauge
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