



Horizontal Inclinometer



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Horizontal Inclinometer



WARNINGS



This instrument must be utilized only for the application it has been designed for, OTR declines all responsibility for any improper use;



Do not let the instrument fall into the hole quickly;



Do not put the instrument in flammable liquids or potentially explosive gases;



Do not use the instrument in water where an electric dissipation is in progress;



Use protective gloves;
Do not let the cable slide quickly in the hands;

Furthemore

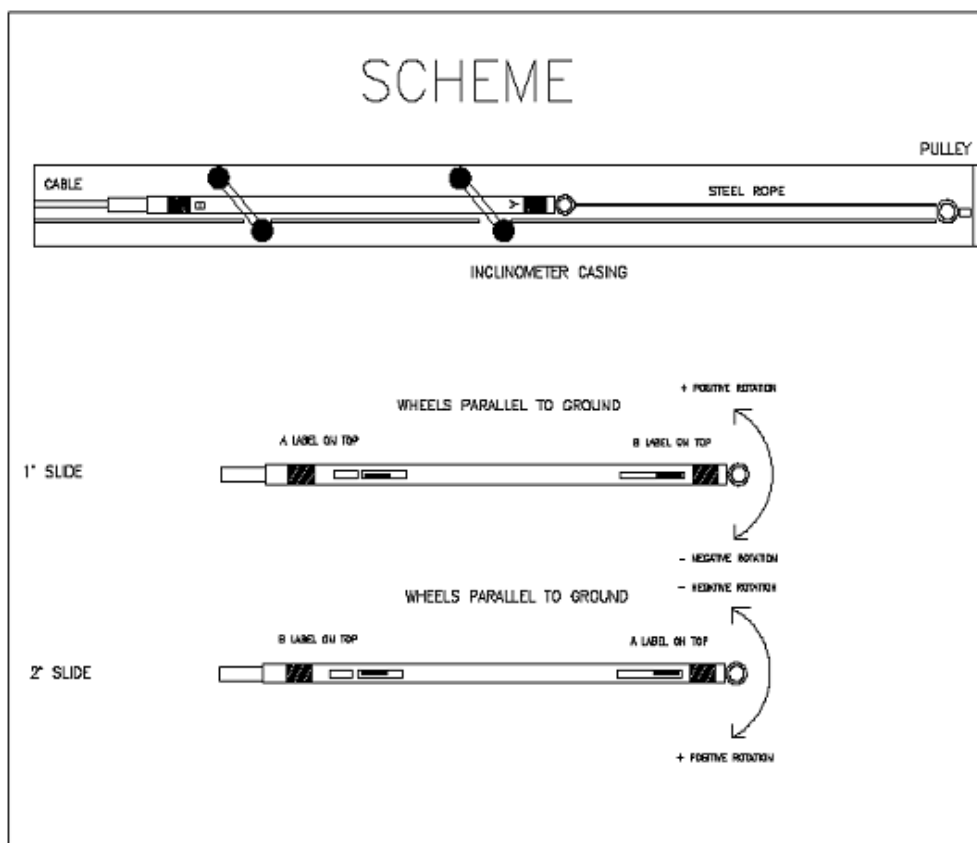
- Do not open the instrument, contact the manufacturer for checks and repairs;
- Keep out of reach of children;
- Clean the instrument and its cable with alcohol or water, do not use acetone or aggressive liquids for plastics or labels.
- Use only its original power supply unit to recharge the datalogger;
- During the recharge phase don not touch the datalogger with wet hands;
- During the recharge phase, disconnect the datalogger from the probe or from any device connected to the AC power supply (e.g. Personal Computer by USB);
- Do not recharge for more than 12 Hours;

Applications

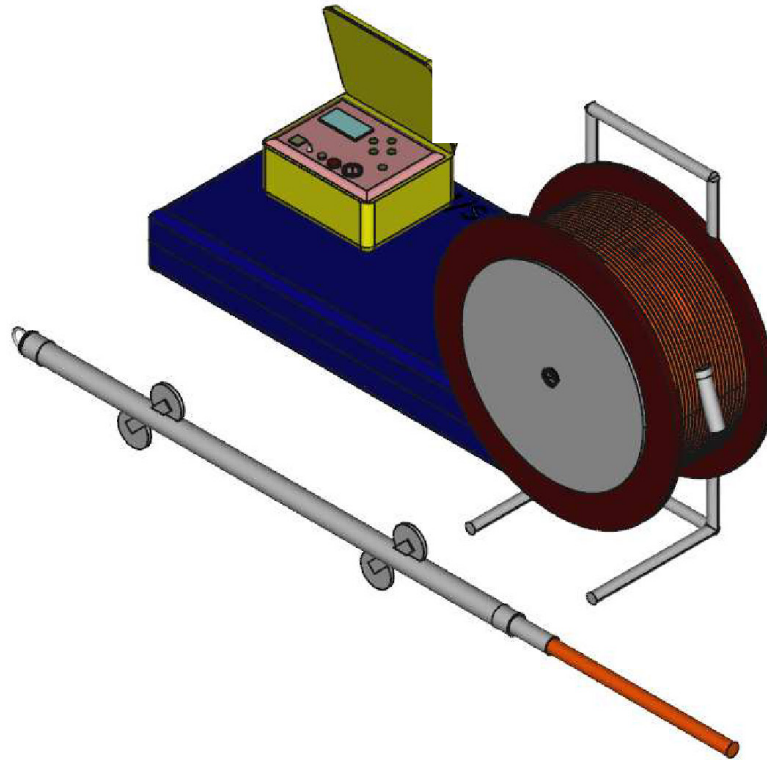
The system consists of an horizontal inclinometer probe with double connectors, operating cable and datalogger. The system is used wherever necessary to detect subsidence detected and under tanks.

In particular it finds application in:

- Monitoring of road and rail embankments
- Monitoring of the weaknesses of the tanks of all kinds
- Control of subsidence in Dams



Description



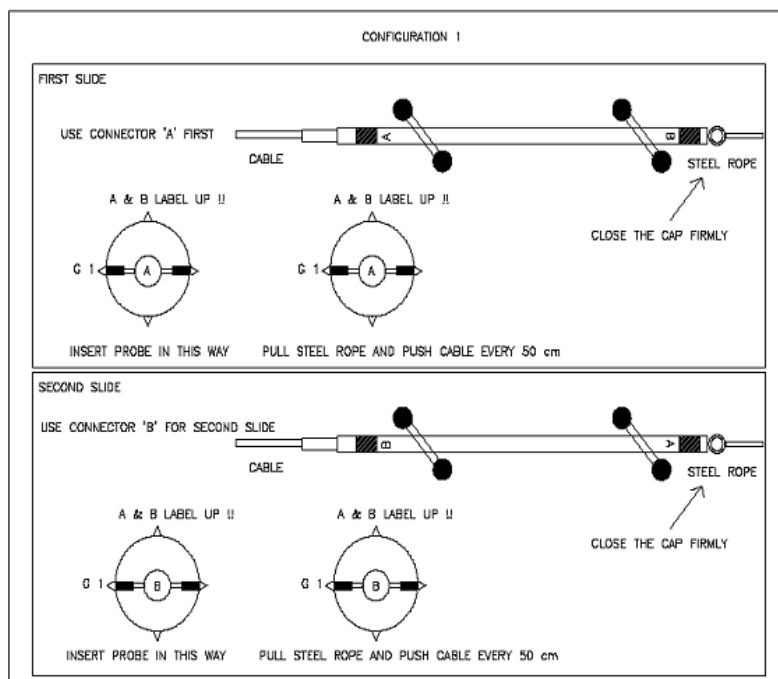
The probe is equipped with an inclinometer Horizontal MEMS sensor uniaxial high precision.

The probe has a connector on both sides to permit reading and straight down from a single inlet.

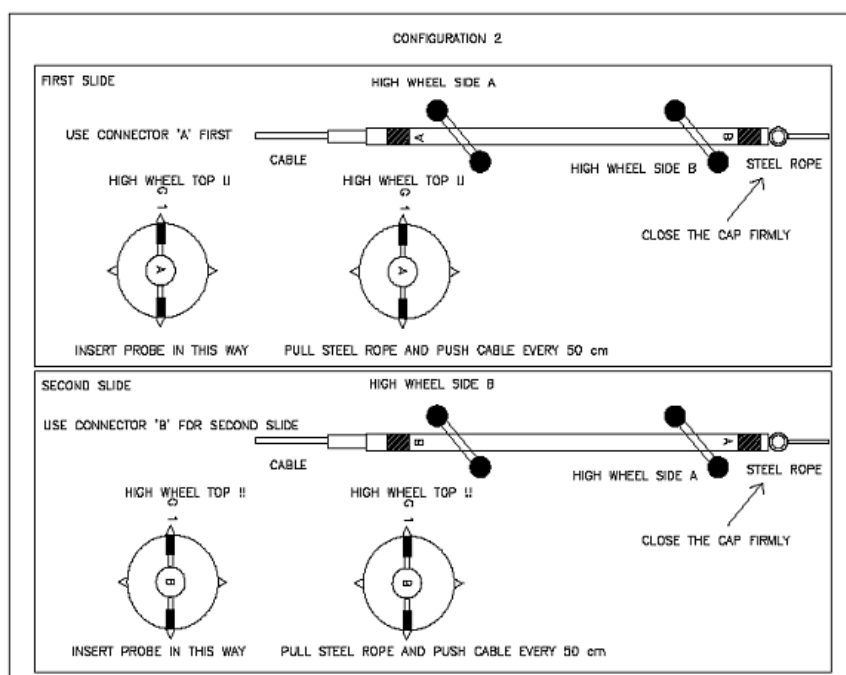
The probe is equipped with arms breakable fastening for easy retrieval in the event of a draw. The datalogger allows measurements quickly and confidently.

Measurements' Configuration

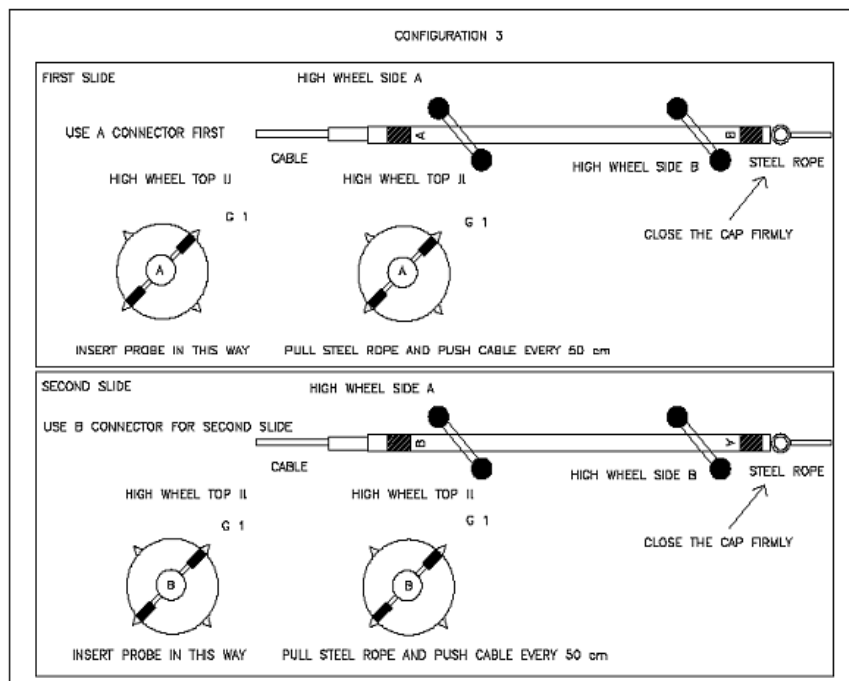
Configuration 1



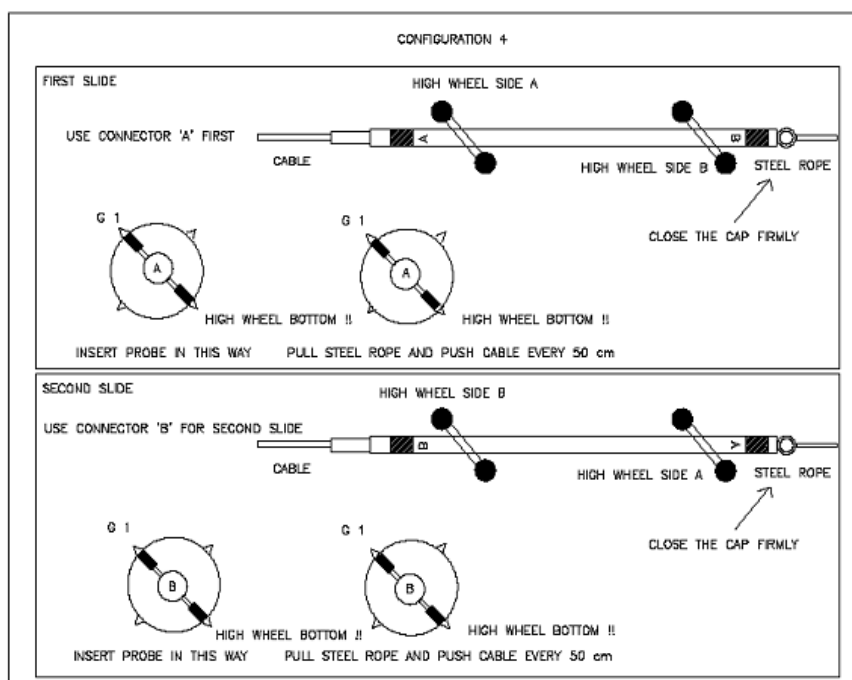
Configuration 2



Configuration 3

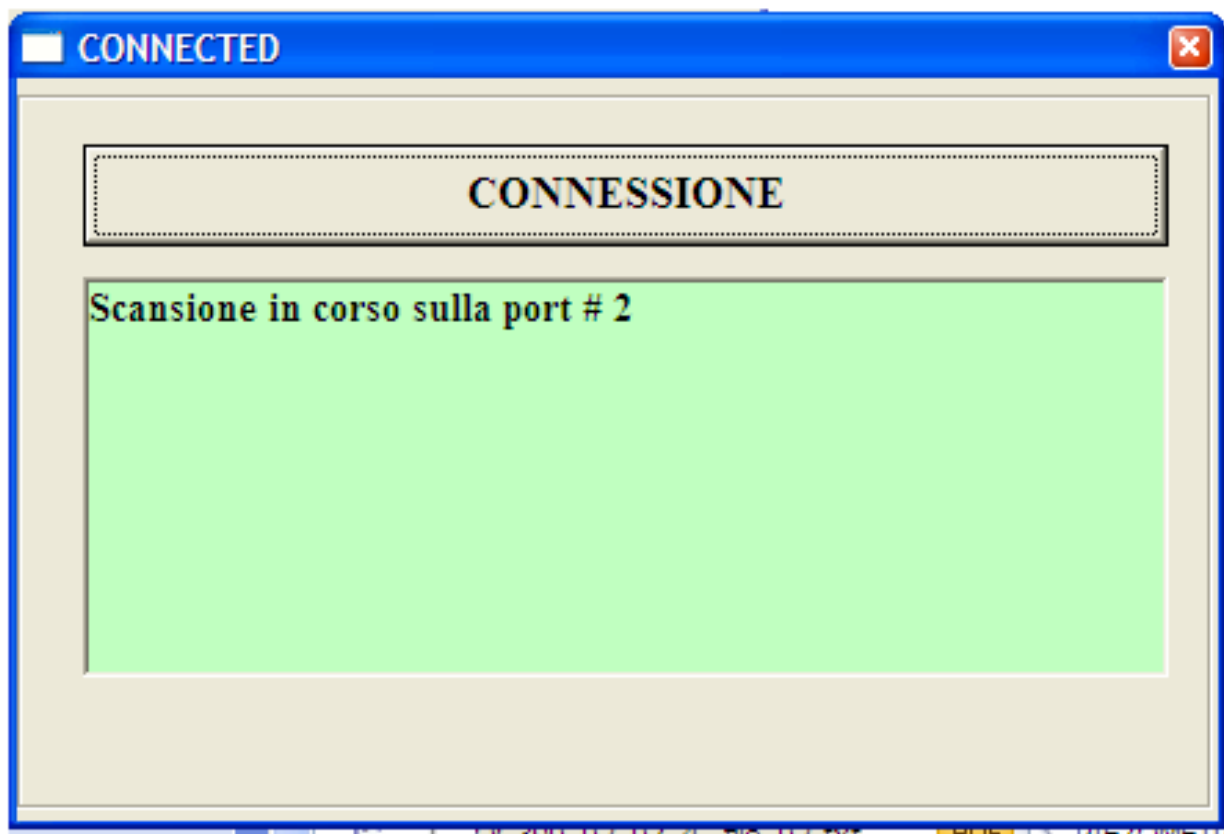


Configuration 4

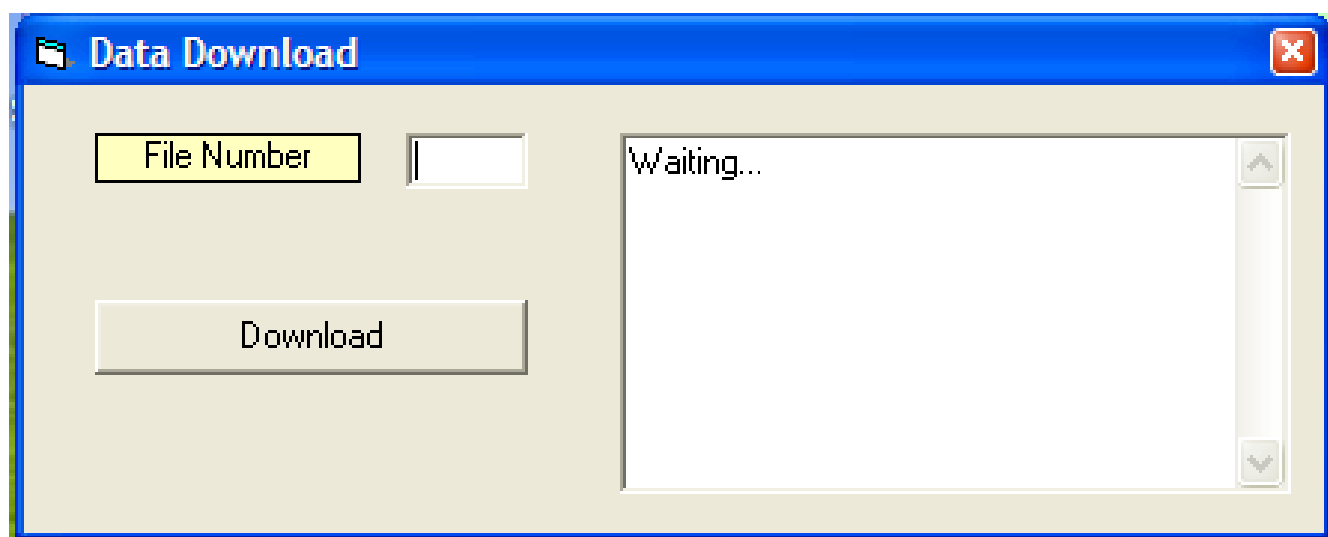


Data Downlaod

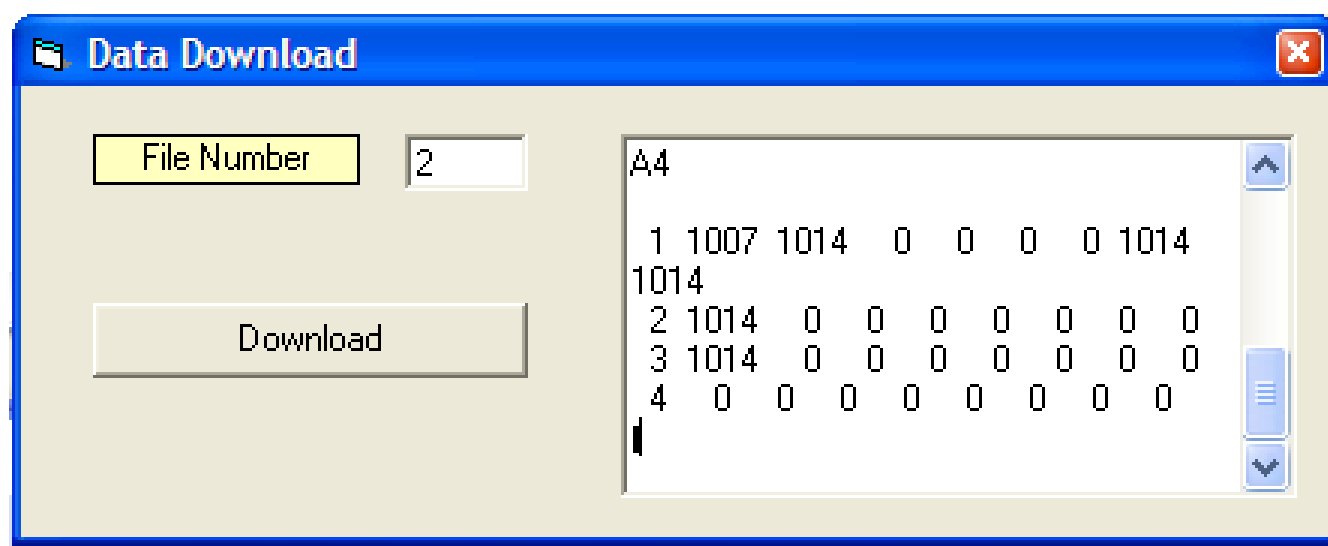
You can download data with OG390 WIN and then convert them in ASCII format and process them without OG390 WIN software. You can also download data by means of a hyper terminal.



Once connected this screen will appear:



Insert file's number and press "download"
Software will download ASCII file



Readouts

You can use Horizontal Probe with the associated datalogger OG397. You should always choose the INCH option when using datalogger. INCH means Horizontal Inclinator. However, to reduce chances of error, we set datalogger parameters for a Vertical Inclinator to be used with your horizontal probe too.



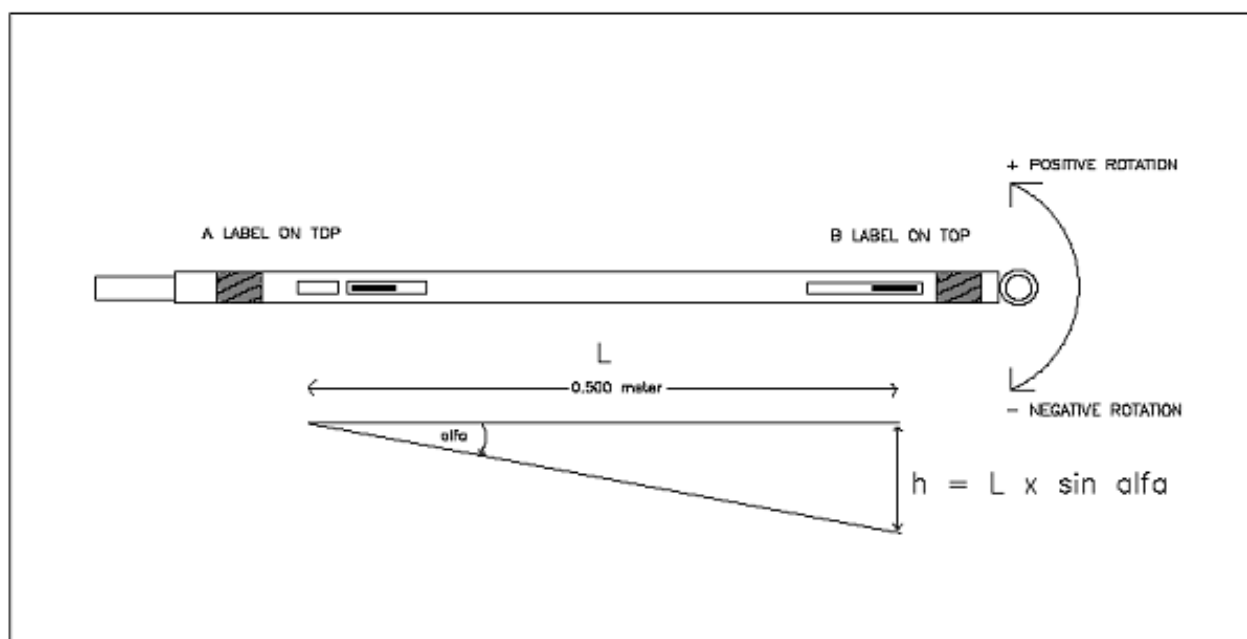
Taking measures and downloading data from datalogger will produce the same results, no matter which kind of inclinometer you chose (vertical or horizontal). B channel will always record 0 values.

Taking Measurements

You must use one of the four possible configuration respecting all of their conventions.

Step probe is 0.500 meter, sensitivity is 25000 sin a.

You must start your measure at the beginning of the hole.



Calculations & Formulas

This way you can calculate the absolute position of the pipe.

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$$h = L \times \sin a = 0.500 \times \left(\frac{\frac{meas1 - meas2}{2}}{25000} \right) \text{ [meters]}$$

+	-
x	=

$$\text{e.g. } h = L \times \sin a = 0.500 \times \left(\frac{\frac{-504 - 510}{2}}{25000} \right) \text{ [meersi] = -0.01014 metri}$$

 π

La misura complessiva ad ogni passo è quindi :

+	-
x	=

$$h_n = \sum_1^n 0.500 \times \left(\frac{\frac{meas1_n - meas2_n}{2}}{25000} \right)$$

 π

In order to obtain differential measurements you can just compute the difference between each step and its respective origin value.