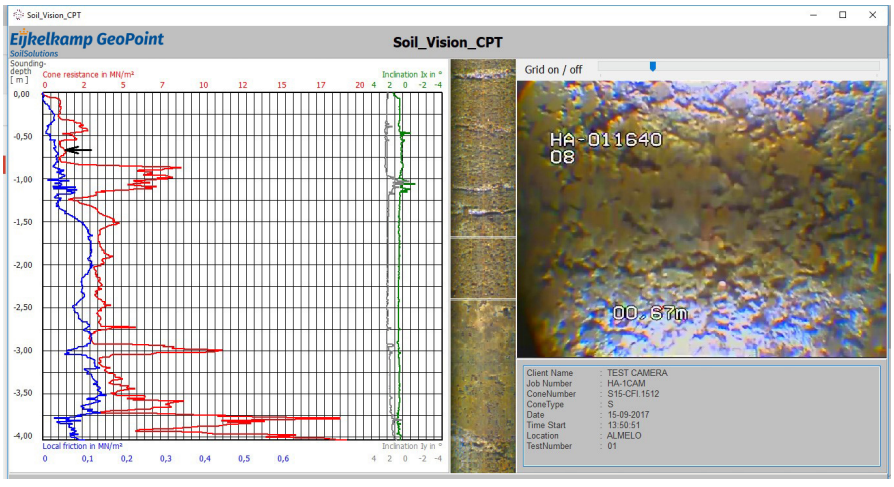
Eijkelkamp GeoPoint
SoilSolutions

VideoCone

Manual



Meet the difference

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On these operating instructions

☞ **If the text follows a mark (as shown on the left), this means that an important instruction follows.**

If the text follows a mark (as shown on the left), this means that an important warning follows relating to danger to the user or damage to the apparatus.The user is always responsible for its own personal protection.

Text **Italic indicated text indicates that the text concerned appears in writing on the display (or must be typed).**

1 VideoCone module or cone

The VideoCone module consists of an optional single element, temperature-compensated strain gauge transducer for measuring both cone resistance and local sleeve friction. It has a miniature colour video camera with six high-brightness LED light sources and double layered durable scratch-resistance sapphire windows, a sensitive pressure transducer and an accurate XY inclinometer.

The VideoCone is capable of measuring all CPTu characteristics* as well having a real time, high-resolution view of the soil. The VideoCone also shows soil texture, colour, grain size and other features, eliminating the need for expensive and time consuming soil sampling.

*CPT(u) readings are optional to this cone.

2 Technical specifications

2.1 VideoCone general specifications

Item	Specification
Cone tip section area	1,500 mm^2
Friction sleeve surface	22,500 mm^2
Total length	570 mm
Weight	5,150 g
Working temperature	0 till 60 °C
Connector	Lemo 18 pins

2.2 Tip resistance local sleeve friction

Item	Specification	Item	Specification
Range	80 kN	Range	80 kN
Accuracy	0.25 %	FS Accuracy	0.5 % FS
Maximum load	150 %	Maximum Load	150 %

2.3 Pore pressure inclination

Item	Specification	Specification
Range	1/ 2/ 5/ 10 MPa	Range 25 ° (biaxial)
Accuracy	0.5 %	FS Accuracy 0.5 % FS

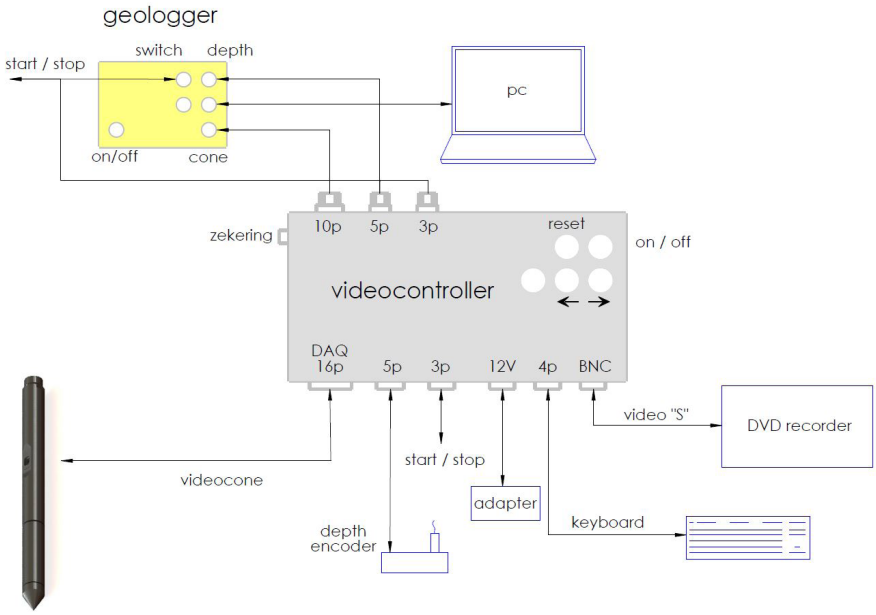
2.4 Camera

- SD resolution with 6 adjustable high brightness LEDs
- 10 x 10 mm field-of-view
- Composite video output in 480i resolution
- Field and easy replaceable sapphire window and camera unit
- Depth synchronization and text inserter control unit

2.5 Video controller

The VideoCone is connected to the surface by means of a special 16 pole shielded cable. Although a standard 16 pole PUR-TPE cable can be used, this cable is preferred to get better video images.
The video controller is used:

- To regulate the light source in the VideoCone
- To split the regular (piezo)cone signals to the Geologger
- To mix the depth from the depth encoder into the video signal
- To mix a string of text from the keyboard to the video signal
- To reset the depth counter
- To make a composite video output signal to the video recorder/screen (the video-S signal can be stored on a computer by a low-cost video grabber or separate DVD or SD recorder. See the separate manuals for instructions.

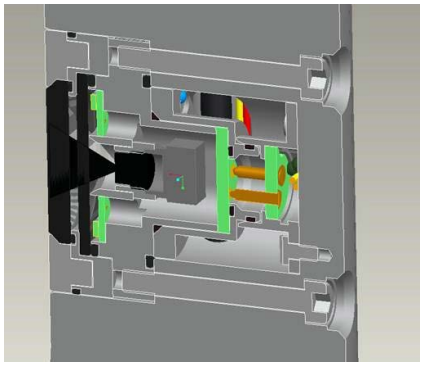


On the controller you will find 5 push buttons :

- On/Off To switch the video controller and module on/off
- Reset Reset depth counter
- ←→ In- and decrease LED light sources at camera
- Alarm Orange button, not in use for this purpose

3 VideoCone assembly

The video camera module has two separated sapphire windows to protect the camera from dirt/moist in the unlikely event the first sapphire glass is broken. To replace the glass you first need to remove the whole module from the outer housing. On the back of the housing you will find two Allen screws (behind the black silicone rubber). When unscrewed you will push the module out of the cone housing.



When removed you will find four screws (on every corner). Unscrew to remove top cover with sapphire glass and o-ring. Replace with new glass and screw assembly together. Please ensure to put o-ring back in the right way to prevent the probe to leak water inside.

Put the whole assembly back in the outer housing with the “TOP” sign up when the cone tip is hold downwards. Put some silicone rubber on top of the Allen screws.