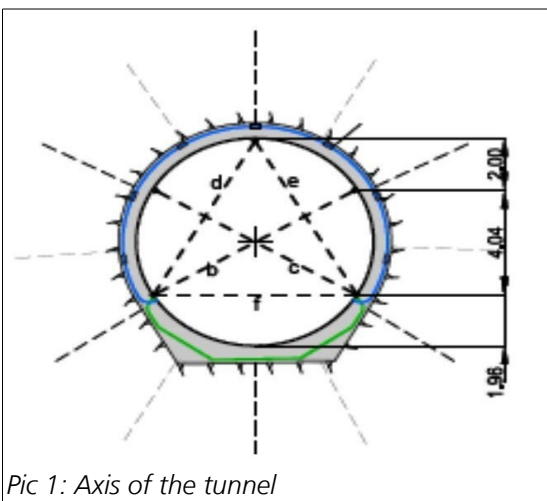


**MONITORING OF PRESSURE TUNNEL**

**Industry :** Geodesy / Construction  
**Application type :** Monitoring

**Brief description**



Pic 1: Axis of the tunnel

The Swiss company Solexperts charges the test track in OW DST (headwater pressure tunnel) while the injections for passive bias to monitor automatically. The task was 3 sections with 5 sampling lengths to automatically monitor and exceed limits an alarm lamp to set so that the injections are stopped in operation. The profiles have been arranged at a distance of about 20 m. For this Dimetix laser sensors are used that are ideal for these harsh environments due to their robustness and precision measurements.

**Passive bias of penstocks**

The penstocks are performed with a non-reinforced concrete inner shell of thickness 0.5 m. To accommodate the corresponding tensile stresses in the concrete lining (internal pressure), a passive bias of the concrete shell is required. For this purpose, an injection pressure is applied in the annular gap

between the spray concrete lining and the concrete shell. To harden and seal a consolidation injection is carried out beforehand in the surrounding mountains through holes and "Einfachpacker".

**Customers advantages**

- Easy installation due to the visible laser
- Operating in large temperature range (-40 .. + 50 ° C) possible
- Maintenance free
- Measuring range up to 500 m
- Accuracy ± 1 mm



Pic 2: Pressure tunnel under construction



## Products used

### FLS-C series

The FLS-C distance measuring device measures absolute distances up to 500 meters on a reflective foil without contact. Due to most innovative laser technology the FLS-C has a unique accuracy of  $\pm 1$  mm. A further advantage of the FLS-C is the quick determination of the positions of moving objects.

The FLS-C is an optical distance measuring device. It measures, maintenance-free, distances up to 65m on natural surfaces. It determines positions of objects that are difficult to access or may have very high surface temperatures. Just as easily, it accurately measures distances in hazardous environments.

The FLS-C is designed to be suitable for both, heavy industrial and outdoor applications. It is constructed of a solid metal case and provides class IP65 environmental protection. **It represents a cost efficient solution even at extreme environment temperatures as low as  $-40^{\circ}$  C.** Furthermore, various features make it flexible for multiple applications in numerous industries such as automotive, paper, metal and textile.

### Specification

- Measuring range 0.05 up to 500m
- Accuracy  $\pm 1$  mm
- Repeatability  $\pm 0.3$  mm
- Extended operating temperature
- Solid metal case IP65
- Supply voltage 9 – 30 VDC



For new projects we recommend our **D-Series**. Further information can be found [here](#).

For more information please contact us on [application@dimetix.com](mailto:application@dimetix.com)

