TOP
„KNOW-HOW“

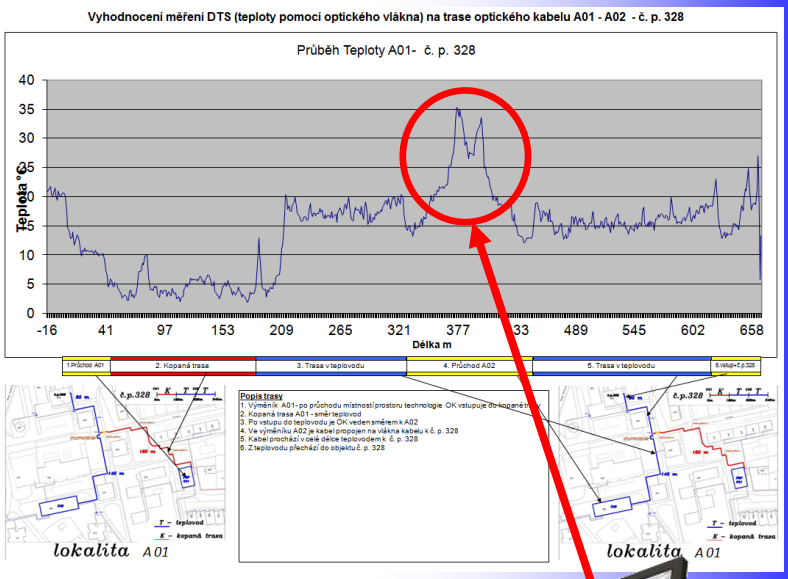
# Measurement of temperature and heat leakage, leakage of liquids, bridge dilatation, security of buildings... using standard optical fibre...

Do you want to be at the place of failure before it really happens? Do you need to reduce maintenance costs? Do you need to measure the temperature of power transformers, lines and other devices? Do you need to monitor the movement of bridge structures and other building systems and elements?

**OPTICAL FIBER AS A SENSOR**

SiTEL

# Solution Description :




SITEL offers its customers a unique optical fibre solution to protect critical infrastructure and security zones, to monitor heat loss (heat pipes, tunnels, metro, mines,...), media leakage from pipelines, monitoring of HVW cables, dam penetration, gas reservoirs, etc.

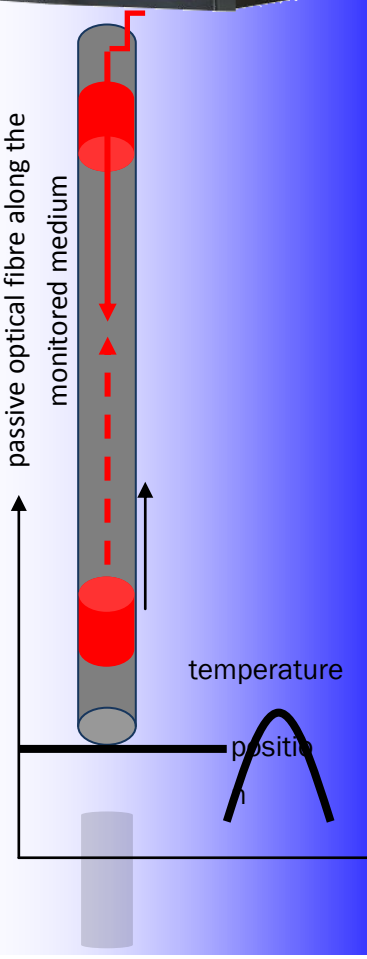
**DTS** *(Distributed Temperature Sensor)* technology based on the change of standard telecommunication optical fibre parameters is used for each application. Optical fibre is resistant to electromagnetic influences, corrosion and weathering. Furthermore, we are also able to offer a *Distributed Strain System* (**DTSS**) designed to track mechanical deformations of buildings, such as buildings, pipelines, etc. Its deployment allows to detect the displacement of building elements and pipes in the horizontal and vertical direction, or their deformation, which will allow for timely intervention and prevention of large losses. We also have experience in deploying security applications that monitor unauthorized access to buildings or monitor attempts to mechanical damage of buildings.

**Basic DTS parameters:**

- Temperature range -20 °C to +80 °C
- Resolution 0.01 °C
- Measuring range according to product type from 0 to 30 km
- Possibility to use multiplexed channel units up to 16 fibres
- Spatial resolution 1 m
- Measurement time on one fibre 10 s to 6 hours

**Advantages:**

- It is not necessary to have the power supply at the measuring point (only at the beginning of the measured section)
- Access to measuring points from one end of the fibre, one fibre provides several thousand measured points, points can be grouped into logical sections
- Measurement is not influenced by electromagnetic fields
- No potential or current in the measuring sensor (optical fibre)
- Easy installation of sensor / fibre, almost no maintenance
- Suitable for complicated conditions, does not corrode, does not matter moisture, chemically resistant
- The measurement is automatic and is evaluated using special software
- Critical states can be sent by SMS, e-mail, to surveillance systems




We already have practical experience with concrete results, as demonstrated, for example the measured temperatures of the cable by the optical fibres stored in the heat pipe shown on the picture above. Each project has completely individual requirements and conditions, and therefore we are ready to offer you a free professional consultation at first and eventual implementation of a pilot project to verify the required results.

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