



# DEHN protects.

Taimeralm energy recovery plant  
in the Felbertal

## Customer



transalpine pipeline

Transalpine Ölleitung GmbH

## Project overview

### Branch

Oil transport  
Pipeline technology

### Application

Lightning protection zone concept  
with coordinated surge protection  
concept for the Taimeralm energy  
recovery plant in the Felbertal

### Hardware

HVI® Conductor  
Blitzductor XT (combined light-  
ning current and surge arrester  
with integrated LifeCheck con-  
dition monitoring)  
DEHNventil  
DEHNsecure

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## Taimeralm energy recovery plant in the Felbertal



### Transalpine Ölleitung GmbH

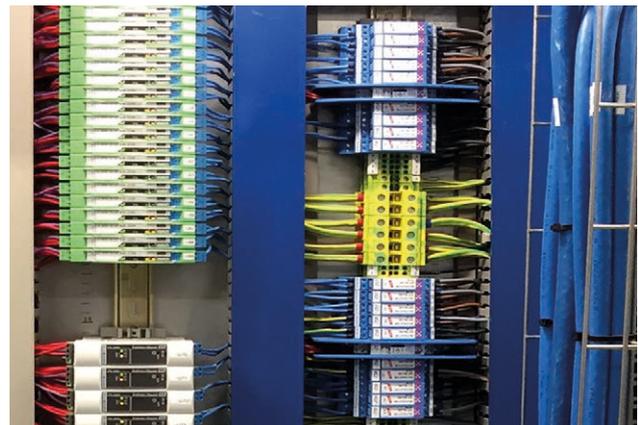
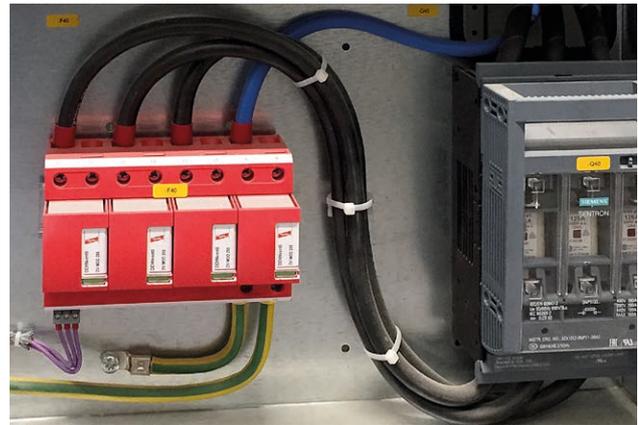
The Transalpine Pipeline (TAL) is Europe's most important oil pipeline and, since 1967, has been transporting oil from Trieste to eight refineries in Austria, Germany and the Czech Republic. One of the special operative challenges it faces is overcoming the main ridge of the Alps with a height difference of 1,600 m with the help of electrically driven pumps. To utilise the energy produced in the pipeline inclines at the Felbertauern, a unique project in the pipeline sector has been put into practice: With the Taimeralm energy recovery plant, the TAL succeeds in recovering the energy previously converted to heat using a turbine system and feeding the electricity generated back into the grid. The system produces between 10–11.5 GWh per year, which corresponds with 12 % of the energy consumption of the Austrian TAL pump stations.

### Challenge

Worldwide, the Taimeralm energy recovery plant is a unique new building project in the pipeline sector. The top priorities for the Transalpine Pipeline are personal and environmental safety and highly available operation of control and telecontrol systems. The plant is extremely vulnerable to lightning strikes due to its proximity to the mountains, the stony ground and the poor soil resistivity. In the case of the Taimeralm energy recovery plant, it was important to take a holistic view of the installation: in addition to lightning protection, it was essential to consider the protection of sensitive terminal devices!

### Solution

The Taimeralm lightning protection concept guarantees optimum protection of terminal devices (control and telecontrol systems) under consideration of the specific conditions of the plant. The concept was put into practice with isolated external lightning protection using HVI technology, a closed meshed earthing system, meshed equipotential bonding and surge protection for the power supply, measuring, control and regulation (MSR) technology, and the telecontrol system. The high-capacity surge arresters from the DEHNventil, DEHNsecure and Blitzductor XT series with monitoring function allow constant status monitoring of the arresters and quick and easy testing or removal of the module.



Optimum protection of control and telecontrol systems with a coordinated surge protection concept

### Advantages of the DEHN solution

- Optimum protection against surges and direct lightning strikes
- Maximum system availability – lower servicing and maintenance costs: thanks to the automatic and permanent monitoring of the arresters via LifeCheck
- Minimum wiring effort – simple and interruption free exchange of modules: no need to disconnect the wiring
- Optimum configuration of external lightning protection saves costs and installation time
- Technical consultation and training on site
- Effective, tried-and-tested and durable system