



# DEHN protects.

Pipelines exposed to AC voltage

## Customer

**enso NETZ**

ENSO NETZ GmbH, Dresden

## Project overview

### Branch

Cathodic corrosion protection technology

Gas transport

Pipeline technology

### Application

Protection of pipelines exposed to AC voltage,

power supply,

anode current and sensor cable

### Hardware

Smart decoupling device VCSD (voltage-controlled smart decoupling device)

DEHNventil

BLITZDUCTOR KKS

# DEHN protects.

## Pipelines exposed to AC voltage



ENSO NETZ GmbH is a subsidiary of ENSO Energie Sachsen Ost AG. It is a competent partner for electricity, gas and broadband connection as well as for operating metering points. The grid and gas network operator ENSO NETZ GmbH gives top priority to reliable energy distribution in East Saxony. To optimally protect these powerful networks and systems and all those working on them from the effects of overvoltage or AC corrosion, a protection concept tailored to the local conditions is required.

### Challenge

The pipeline of ENSO NETZ GmbH is exposed to AC voltage caused by a railway line running parallel to it. This AC voltage must be limited. A system-specific surge protection solution was developed in cooperation with the cathodic protection experts at ENSO NETZ GmbH and the relevant cathodic protection service provider. This concept was implemented on site and meets the following protection goals:

- ➔ Protection against transient lightning overvoltage which may damage the electronic devices installed
- ➔ Discharge of temporary and long-duration AC voltage to ensure personal protection and prevent AC corrosion
- ➔ Control and monitoring of the smart decoupling device VCSD by means of the Weilekes Elektronik GmbH telecontrol system

### Solution

The metal rear panel of the cabinet which is the reference potential for both the surge protective devices and the electronics in the cabinet forms the basis for the protection concept. The protection components were carefully selected according to the required performance (discharge capacity) and correct installation was verified. The VCSD (voltage-controlled smart decoupling device) was also mounted in the switchgear cabinet. It discharges the temporary and long-duration AC voltage to a low-impedance earth electrode. Personal protection on the pipeline is ensured by permanently monitoring the external voltage. The decoupling device VCSD is connected to the Weilekes Elektronik GmbH telecontrol system, with which the AC discharge currents are permanently monitored. To avoid the open circuit potential measurement being influenced by the discharge of the alternating currents, the decoupling device VCSD can be switched off by way of the Weilekes telecontrol system for the duration of the measurement.



Protection of a pipeline exposed to AC voltage using the smart decoupling device VCSD

### Advantages of the DEHN solution

- ➔ High discharge capacity in case of external voltage
- ➔ Optimal protection against AC corrosion – without negatively affecting the DC potential on the pipeline
- ➔ Effective personal protection in case of impermissibly high touch voltages – even if the VCSD is switched off
- ➔ Easy monitoring thanks to digital and analogue output
- ➔ Can be easily connected to the telecontrol system of the company Weilekes Elektronik GmbH
- ➔ Service: Technical support and training on site