SF6 INSULATED COMBINED TRANSFORMERS
Trench is a recognized world leader in the design and manufacture of high voltage equipment for application on electric utility and high energy industrial systems.

SF6 insulated Combined Instrument Transformers are used to convert high transmission line Voltages and Currents (Voltage up to 800 kV and current up to 6000 A) to standardized low and easily measurable values, which will be used for metering, protection and control of the high voltage system. As such, the need for accurate and reliable voltage and current transformation is essential. The reliability and security of Trench gas-insulated instrument transformers is based on over 50 years of innovation with gas-insulated units operating under a wide range of environmental conditions. Combined Instrument transformers also ensure suitable electrical insulation between high voltage and low voltage measuring equipment.
**General**

- Complete portfolio available from 72 to 800 kV
- Meet all IEC and ANSI metering and protection classes, including special core classes TPS, TPX, TPY and TPZ ones
- Rated primary Voltage up to 800 kV
- Rated primary current up to 6000A
- CT ratings:
  - Rated secondary current of 1A, 2A or 5A
  - Rated short time thermal current up to 80kA
  - Rated short circuit withstand up to 200 kA
- VT ratings:
  - Maximum simultaneous burden (IEC cl. 0.2) 150 VA
  - Maximum simultaneous burden (ANSI) 0.32/0.15Y
  - Thermal limiting output up to 3000 VA
- Suitable also for Line Discharge use
- Wide-range ferroresonance-free design without the use of an external damping device
- Fully type tested according to international standards
- Special tests are also available to meet specific customer requirements

**Product design**

- SF6 is the main insulation medium
- Explosion-proof design
- External insulation with composite insulator; porcelain insulator available on request
- External parts made of aluminum or stainless materials
- Bar-type primary conductor allows higher short circuit current and avoids large voltage drop across the primary winding
- Available to withstand:
  - Internal arc effects
  - (according to IEC 61869 – protection stage 1 –)
  - Heavy seismic solicitations, according to IEC 62271, IEEE 693 and specific customers’ requests

**Product process**

- Optimized design to manufacturing
- Lean manufacturing concept applied to the whole supply chain
- Modular design allows the use of reduced numbers of components
- Partial discharge free design and process
- Maintenance free during a long lifetime of more than 30 years
- Trench Management System has been certified to ISO 9001, ISO 14001 and BS OHSAS 18001

Thousands of transformers installed and in service for more than 50 years all over the world and in all environmental conditions are the best guarantee of the quality and reliability of our products.
PRODUCT STRUCTURE

- Safety Valve
- Aluminium Top Housing
- VT Core And Windings
- High Voltage Terminal
- Secondary CT Cores & Windings
- High Voltage Insulation
- Porcelain/composite Insulator
- Densimeter
- Secondary Terminal Boxes
- Gas Filling Valve
- Earth Terminal
# ELECTRICAL and MECHANICAL DATA

<table>
<thead>
<tr>
<th>Type</th>
<th>Highest Voltages for Equipment Use</th>
<th>Rated Power Frequency withstand Voltage</th>
<th>Rated Lightning withstand Voltage</th>
<th>Rated Switching withstand Voltage</th>
<th>Arc Distance</th>
<th>Minimum Nominal Specific creepage distance (Pollution Level III)</th>
<th>Minimum Nominal Specific creepage distance (Pollution Level IV)</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D - Base Fixing</th>
<th>Total Weight</th>
<th>SFF Weight</th>
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Data are indicative and are not binding. Dimensions are referred to typical combined voltage transformers equipped with composite insulator & according to IEC 61869 Standards – Other options are available. The regular improving on design may cause discrepancies between this document and updated product.
On request our sales team will be glad to submit you a firm updated technical & commercial offer fully customized to your specific requests.
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