CoreTec® 3.0
The intelligent way to predictably manage your transformer assets.

Transformers are among the most expensive equipment installed in power networks. To guard your investment, you have to take the right measures. CoreTec® is a continuous online monitoring solution that detects problems and allows preventive measures to be taken. CoreTec provides you with real Transformer Intelligence® that increases performance, reduces the risk of failures and cuts maintenance costs.

**Built-in intelligence**
CoreTec continuously monitors mission-critical functions of the transformer. The system performs an evaluation of operating conditions, both current and historical. It can also simulate different operating conditions and forecast their impact on the transformer’s life.

**Economical and cost-effective**
The system is modular and expandable to suit your present and future requirements. It gives you more functionality than other comparable systems, besides the intelligence. And CoreTec is maintenance free for 15 years, thanks to robust and proven components.

**Easy to install and use**
The compact size and minimized cabling make all installations, new and retrofit, easy and fast. Few sensors are required. No specific hardware or software is needed. The unit is easy to operate and displays a large number of operational parameters in a user-friendly web interface.

**Proven technology**
CoreTec is an intelligent, safe and reliable solution that predictably manages transformer assets worldwide. Building upon longstanding transformer knowledge, ABB’s CoreTec can be installed on any transformer brand and type – new and existing.

**CoreTec Cyber Security**
ABB has been advancing technologies of the Internet of Things, Services and People for more than a decade. As opportunities evolve, so too does the need to be protected from cyber security threats.

The CoreTec is secured by the following:
- Cyber Security Robustness Testing
- All user accounts are documented and changeable/configurable
- The use of Cryptographic algorithms as recommended by NIST
- Hardening, such as no unnecessary ports and services, configurable communication protocols
- Proper Cyber Security documentation
- Support for patch management and vulnerability handling
- Products developed using a security development life cycle (SDL)
More CoreTec benefits
- Early detection of malfunctions
- Supports condition assessment and asset management of your transformers
- Improves predictive maintenance and reduces maintenance costs
- Dynamic overload capacity assistance enables safe overloading of your transformer
- Advanced cooling control with forecasting for stable temperature and reduced breathing
- Remote access to real time transformer data
- Operating data recording CoreTec always suits your needs

CoreTec is modular and expandable for additional requirements that may be needed in the future. Its functionality can include any of these parameters:

Standard
- Load and peak load, load in percent
- Current on HV, LV and TV
- Top oil and bottom oil temperature
- Hot-spot temperature on HV, LV and TV
- Hot-spot temperature forecast
- Transformer thermal ageing due to heat
- Dynamic overload capacity calculation
- Bubbling temperature in transformer
- Transformer temperature balance
- Event recording
- Web based graphical user interface in 10 languages
- Warning and alarms for all monitored parameters
- Dry-contacts for warning and alarm signals to SCADA
- DNP3 and CAN bus
- Remote access through Ethernet connection
- 15 years of data storage in CoreTec cabinet
- 8 analogue inputs available
- 12 digital inputs and 4 digital outputs available

Optionals
- Communication Protocol
  - Communication IEC 61850 (MMS, GOOSE, SV, Server, Client)
  - DNP3 RS485
  - Modbus RS485

Advanced cooling control
- Monitoring and control of cooler groups
- Starts on top oil, hot-spot and forecast temperature
- All cooler groups equally used
- Logic to run motors each week
- Time delay between cooler group start

On-Load Tap Changers (OLTC) monitoring
- Tap changer position, temperature and temperature balance
- Tap changer contact wear calculation, time to next service
- Total time in each position and number of times in each position
- Early information of inactive OLTC to avoid carbon build-up

Dissolved Gas Analysis (DGA) module
- On-line gas and moisture analysis of the transformer oil for up to 9 different gases
- Graphical presentation
- Trend alarm and level alarm
- Duvals triangle, CO₂/CO, IEC 60599, IEC Bushing,
  Tap-changer, Doernenburg, Rogers ratio

Services
- Installation
- Commissioning
- On-site Training
- Engineering Support