

DISTRIBUTION TRANSFORMERS

TXpert™

The world's first digital distribution transformer



ABB's TXpert digital distribution transformer operates on an expandable platform to make informed decisions about asset health and grid conditions.

TXpert™ for today's distribution grid

ABB has developed the world's first digital distribution transformer to meet the evolving needs of today's grid.

The distribution grid is becoming a mesh of different generation sources like renewables, microgrids, and rapid localized expansions. As the grid becomes more complex, it requires a more advanced distribution transformer.

The TXpert digital distribution transformer was developed to address increased industry requirements for:

- Reducing maintenance costs
- Minimizing on-hand inventory
- Avoiding extended downtimes
- Asset position tracking (with GPS)
- Ability to collect and analyze data

Generate actionable information

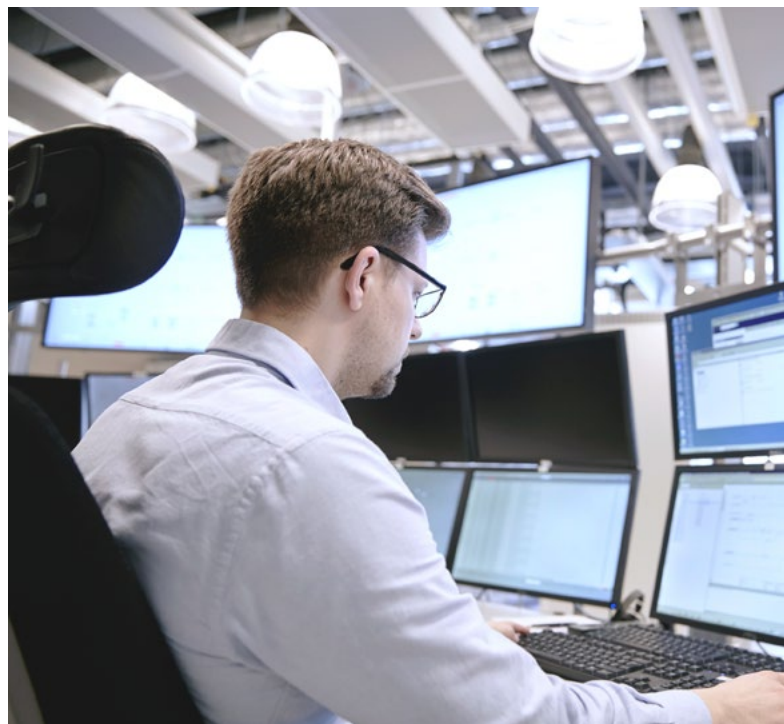
The TXpert digital distribution transformer measures, stores, and trends operating data and calculates transformer consumed life. It uses mature

and reliable sensing technology with industrial computing components integrated directly into the transformer during manufacturing. Its unique and fully-incorporated sensing and computing functionality ensures data accuracy that is time-synchronized to facilitate both inference and predictive analytics.

Real-time data is downloaded using TXpert's secure user interface. The sensor's raw data and analytics output can be stored for up to 20 years and uses advanced industry encryption.

Using TXpert digital distribution transformers, customers can:

- Measure transformer key operating parameters
- Improve condition-based maintenance planning
- Store time-stamped and synced operational data for short and long-term analysis
- Reduce inventory
- Increase uptime
- Have insight into condition of grid
- Identify operational trends or potential failures



Sensing and output features

Sensor measurements: ambient and top-oil temperatures, levels, pressure, moisture, voltage, current, hydrogen, and global positioning (GPS)

Local analytics: consumed transformer lifetime, total harmonic distortion (THD), expandable for additional analytics

Local built-in Wi-Fi to download data. Wired Ethernet is enabled to connect to LTE, GSM, wireless mesh, WAN, and others mediums using standard protocols, DNP3.0, IEC61850, etc.

Basic configurator user interface (download the data update/ upgrade firmware and set the parameters)

Real-time data of measurements and algorithms outputs with WAN enabled

TXpert applications:

- Residential and commercial
- Renewables
- Industrial
- Oil, gas and chemical
- Data centers

TXpert ratings:

Liquid-filled distribution transformers from 300 kVA to 10 MVA

Being the market leader for transformers and grid solutions, ABB brings technology, experience and industry know-how to deliver solutions that address the grid's developing needs.

TXpert differentiators:

- Integrated solution built into the transformer as opposed to a bolt-on attachment
- Capitalized expense (CAPEX) vs. expense on existing operational equipment (OPEX)
- No additional wiring or hardware required
- Time-synched data allows for trending analytics (inference and predictive)
- Remotely expandable platform that can be accessed while still online
- Built-in Wi-Fi and a wired Ethernet connection
- Flexible configuration to support data through numerous communication mediums

The transformer is the only active element in the grid. ABB's TXpert digital distribution transformer helps customers understand transformer and grid conditions to ensure a more reliable network.

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