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. As the grid becomes more complex, it requires a more advanced distribution transformer.

Customers are requiring advanced data in order to make informed decisions about asset health, planned replacements, and overall grid conditions. TXpert addresses these challenges and is easily expandable to address the challenges of tomorrow.

The TXpert digital distribution transformer was developed with industry requirements in mind:

- Ability to collect, analyze and store data
- Minimize on-hand inventory
- Avoid extended downtimes
- Reduce maintenance costs
- Asset position tracking (with GPS)

Turning insights into actions
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

TXpert leverages ABB’s transformer experience and digital technology to support our customers’ need for real-time information and a more reliable distribution grid.
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 into the transformer during manufacturing - not a cumbersome attachment
- Capitalized expense (CAPEX) vs. expense on existing operational equipment (OPEX)
- No additional wiring, software or hardware required
- Time-synched data allows for trending analytics (inference and predictive)
- Platform that can be accessed while still online
- Wi-Fi, Ethernet or cellular connections available
- Flexible configuration to support data viewing through customer’s existing communication tools

ABB’s TXpert digital distribution transformer helps customers understand transformer and grid conditions to ensure a more reliable network.

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 platform for additional analytics
- Built-in Wi-Fi to download data. Wired Ethernet is enabled to connect to LTE, GSM, wireless mesh, WAN, and other 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:
- Utility Distribution
- Renewables
- Industrial
- Oil & Gas and Chemical
- Data Centers

TXpert power ratings:
- Liquid-filled distribution transformers from 300 kVA to 10 MVA, and up to 36 kV

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