

SMART BREATHERS



**Qualitrol® STB000
Series**

**Second Generation
Smart Transformer
Breathers**

Protect against premature aging
and reduce maintenance costs

Qualitrol® Company LLC



Using knowledge gained with our first generation product and gathering customer feedback, we have developed the first universal maintenance free smart breather. It is an exciting innovation for the industry.

- Jesse Baker, Product Manager



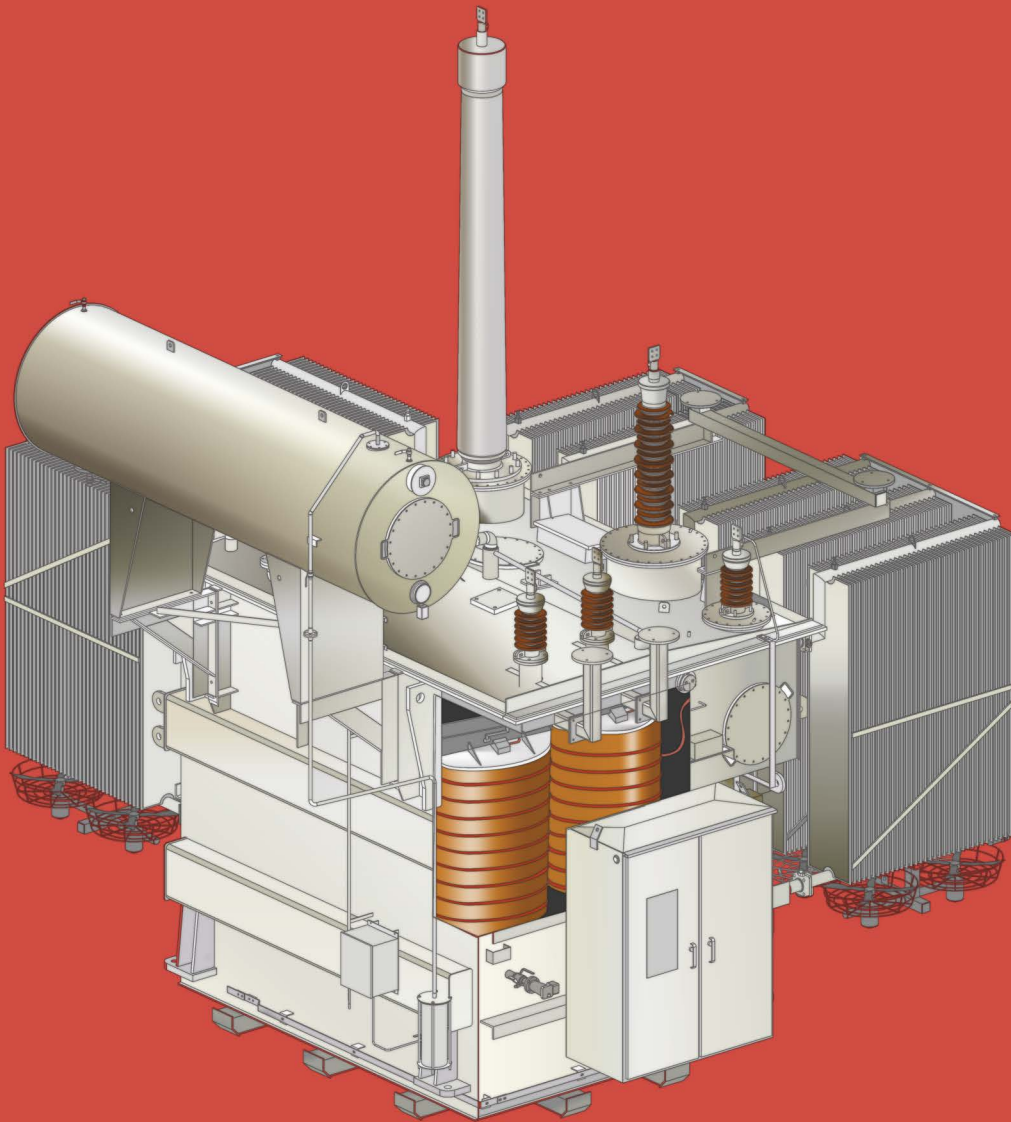


Product Summary/ Application

It is no secret that water and electricity do not play well together. Even the smallest amounts of moisture in a power transformer can have varying degrees of problems ranging from limited output to catastrophic failure.

As a transformer operates, oil expansion and contraction causes a transformer to breathe. Humidity from the atmosphere may degrade a transformer bladder, oil and insulation system over time. This degradation causes unnecessary aging to the asset, reducing the overall life and performance. This can lead to additional maintenance or even premature and unexpected asset failure in the future.

The Qualitrol STB series smart transformer breather removes moisture from air entering oil-filled transformers or LTC conservators. The breather is automated to regenerate the silica gel desiccant at a user selectable time interval - Parts Per Million (PPM) or Relative Humidity (RH) threshold - avoiding unnecessary trips to site to refresh the desiccant. The silica gel may be regenerated without replacement due to internal heaters inside the unit that drives out moisture on a transformer exhale cycle.



A NEW ERA

The STB000 represents a new era in transformer breathers. Easy retrofits now possible with a universal model that works for both LTC and Main Tank applications, user-friendly configuration software and multiple communications options combine to make this the smart transformer breather for the future.



The STB000 offers utilities and transformer asset managers the ability to reduce maintenance costs, protect against premature aging and keep their assets dry with the first universal, maintenance-free breather. A host of new features and enhancements include data logging and a test button option allows for an easy diagnostic check of breather functions in the field.

The new STB000 software makes setup, customization and installation quick and easy. Alarm and Status relays can be set for failsafe or non-failsafe operation. Configurations can be saved offline for uploading to units later, making fleet wide installations simple. Password controlled software sections allows for read or read/write access depending on the level of access needed.



Reduce maintenance costs

No periodic visual inspections or regular replacements of the drying agent



Automate workflows

Alarming and failure detection capability; no need to rely on human interaction



Extend asset life cycles

By continuously protecting against atmospheric moisture on transformer inhale cycles

The STB000 automatically shifts to a time-based regeneration if it is installed on a tank that does not breathe, such as a LTC application, eliminating the need to carry two models in your inventory.

Easy retrofits now possible with a universal model that works for both LTC and Main Tank applications

Available in either 1kg or 2kg designs, the STB00 monitors the breathing pattern of the tank and switches between main tank and LTC operation automatically.

Multiple mounting options are available for fitting to a new or retrofit installation. Internal cabling allows for easier installation and eliminates unintentional damage to cabling in the field.

A quality unit from a trusted brand, each of our smart breather comes with a 5-year warranty

Desiccant regeneration is configurable by the end user based on % Relative Humidity (RH), Parts Per Million (PPM) or time frequency (days).

The STB000's communication options provide insight into any application

Multiple communication options including 4-20 mA, RS-485 MODBUS and alarm relays transmit the status of the breather, moisture levels and errors such as power failure (failsafe).

Datalogging options track breather status along with Relative Humidity levels and internal temperatures, giving new data for long term planning.

A local USB port inside the control box provides for local reading and configuration of the STB000.

The information and trends gained from the system can be used as part of a Condition Based Maintenance program to optimize maintenance expenditure.



'Smart'

What defines a 'smart' breather from other transformer breathers?

The answer is our 'smart' breather uses a pressure sensor and a pattern recognition algorithm to ensure that the transformer is expelling the moisture, *not bringing it into the tank* upon regeneration.

ASSET HEALTH INSIGHTS

More often than not, a transformer failure is an economic disaster. Most of the time, the economic impact comes from the wait time for a replacement. By not actively monitoring your transformer you could lose revenue, experience catastrophic failures, and have major safety and environmental impacts. The STB000 enables trending and remote monitoring for a better insight into the health of your asset.



STB000 in Numbers

First universal, maintenance free breather for both LTC and Main Tank applications.

#1

1

Single side mounted indication LED indicates quick and easy breather status including power/normal operation, regeneration mode, and error codes.

1 & 2kg

Available in either 1kg or 2kg designs (STB breathers are sized based on the quantity of oil housed within the system).

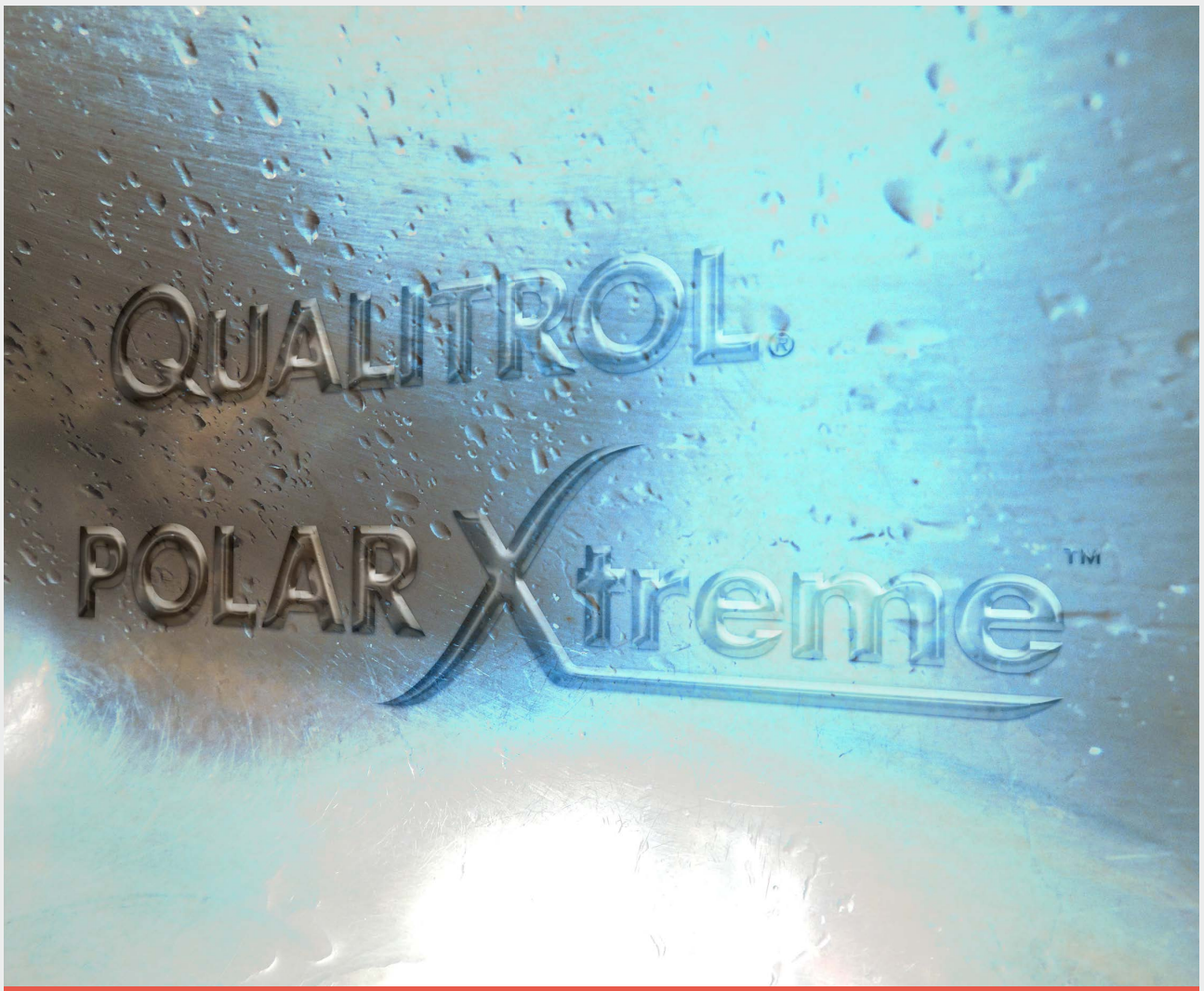
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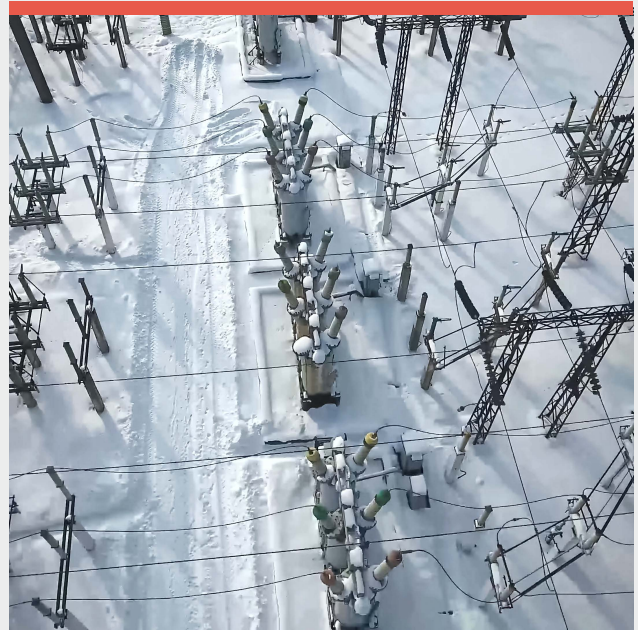
For peace of mind, each breather comes with a five year warranty as standard.

For a detailed specification please refer to the document "STB000 Technical Data" available from Qualitrol. Additionally, Qualitrol regularly creates models with special customer requirements. Contact your local sales representative or Qualitrol Applications Engineer to review your special requirements.

SPECIAL APPLICATIONS

Harsh marine and polar climates require transformer accessories designed and engineered to handle these extreme environments. Qualitrol's line of Offshore Xtreme™ and Polar Xtreme™ smart transformer breathers tackle these saline and temperature extremes to ensure performance even in the harshest of conditions.





Hardened Specifications:

- Extensive use of 300 grade stainless steel metal components
- IP66 enclosure ratings
- Anti-corrosive plastic switch housings with improved moisture ventilation
- Anti-fungal conformal coatings on sensitive electronic circuit boards
- Assembled in the United States

The **Qualitrol Offshore Xtreme™** Smart Transformer Breather removes moisture from air entering oil-filled transformers or LTC conservators. The PE breathers regenerate and operate in the same manner as the standard line of breathers offered by Qualitrol, but offer additional protection in a saline environment. Offshore Xtreme™ breathers are engineered with advanced material sets to withstand the additional environmental constraints, including stainless steel, reinforced fiberglass and glass components.

The **Qualitrol Polar Xtreme™** Smart Transformer Breather removes moisture from air entering oil-filled transformers or LTC conservators. The PE breathers regenerate and operate in the same manner as the standard line of breathers offered by Qualitrol, but offer additional protection for the polar climate. Polar Xtreme™ breathers are engineered to house additional heaters to prevent condensate water from freezing at the outlet of the breather. The addition of these heaters ensures proper drainage after the silica gel has been regenerated in extremely cold temperatures.



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