

REACTRANS

Protecting transformers from high humidity and water condensation



World Leaders in Moisture Control and Humidity Protection

Since 1952 Brownell has developed its experience and a range of products dedicated to providing solutions to prevent and protect against the effects of condensation, high humidity and water contamination.

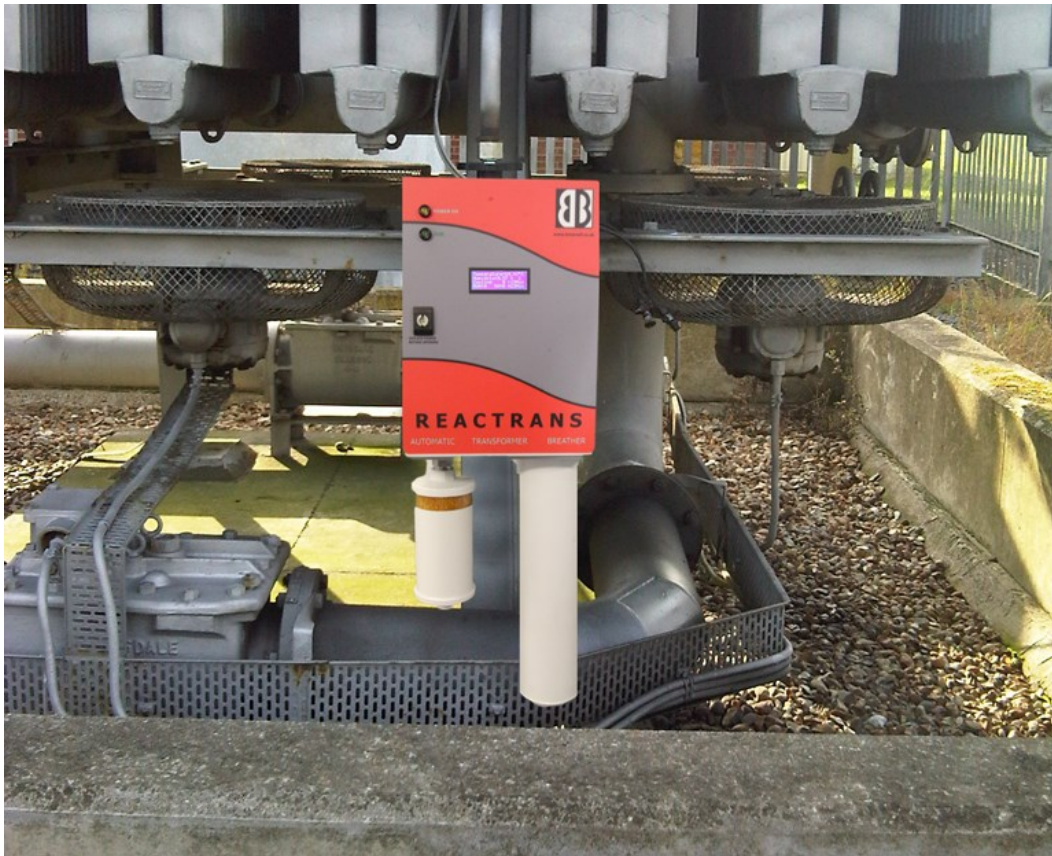
Brownell now offers a comprehensive range of products including desiccators, humidity indicators, pressure relief valves and gas purging systems for applications in all of today's commercial and industrial sectors.

An ongoing commitment to research and development continues to offer customers and user's knowledge and products capable of proving solutions for their needs and requirements. We welcome opportunities to work and cooperate with customers to develop solutions and products for their specific needs.

Brownell is based in North West London on the modern Park Royal Industrial Park and holds ISO 9001:2008 approval.

We also have a comprehensive data library and test facility for the performance of moisture barriers, equipment housings and operational scenarios to assist customers with the best design practices for the performance of their system.





Brownell Limited has developed a range of intelligent breathers for oil filled transformers which are designed to constantly maintain the correct environmental condition and balance.

The REACTRANS is a maintenance free breather which automatically regenerates the desiccant when saturated. A passive transformer breather maintains the operational effectiveness during reactivation.

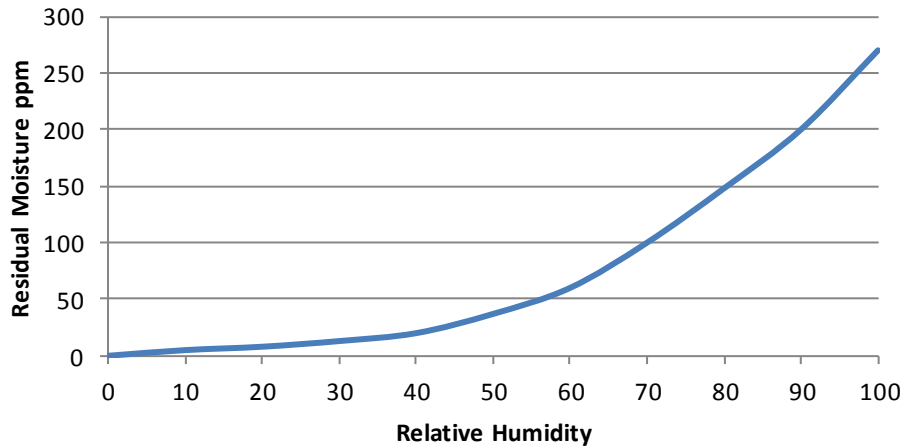
**Protection Against:**

- High Humidity
- Water Condensation
- Pressure Variations
- Dielectric Loss
- Mould Growth
- Outgassing

Technical Key Features:

- Easy Installation
- Compact Design
- Intelligent Controls
- Minimal Energy Consumption
- Maintenance Free
- All Weather Protection
- Up to 100,000 Litre Oil Capacity
- Floor Mounting Option
- Maximum Adsorbent Efficiency
- Non Condensation Operation

Residual Moisture v % Rh



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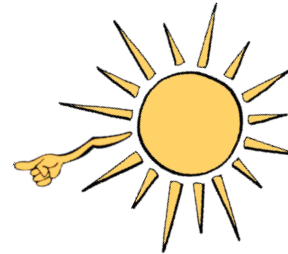
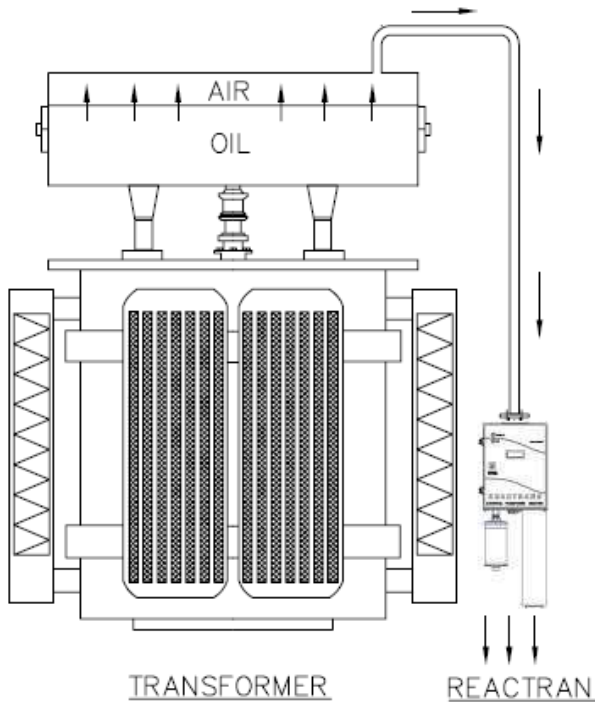
The equilibrium relative humidity to water in oil content is typically 5-20 PPMV which also relates to the colour change of desiccant saturated at 12-14% adsorption by weight.

The water content of oil increases as it is exposed to increasing relative humidity



Operating Principle

Transformer Heating

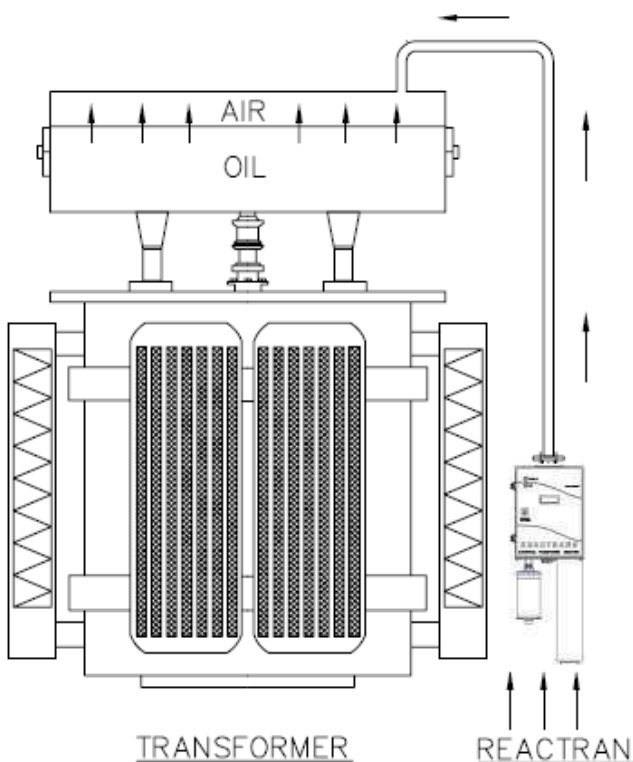


During the day

When a transformer heats up the air within the conservator is displaced through the vent pipe. In accordance with combined gas laws.

As an approximate guide a temperature change of 20°C will stimulate a volumetric displacement of around 7%.

Transformer Cooling



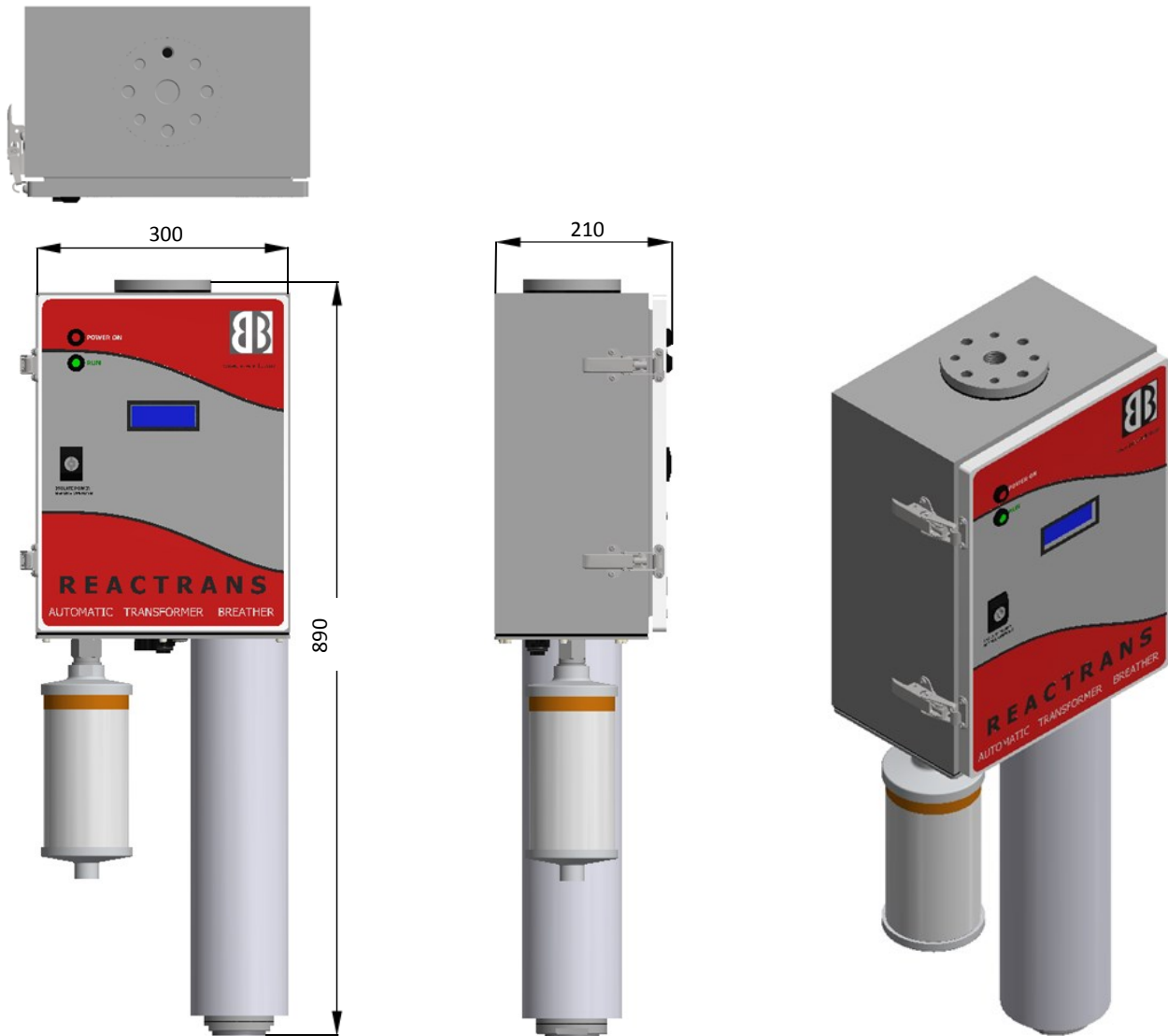
During the night

When a transformer cools down, moisture laden atmospheric air will be drawn back into the air space of the conservator.

Installing a desiccant breather to the vent pipe will ensure that the bulk of any moisture vapour is adsorbed.

If the atmospheric moisture is not adsorbed before entry. Then it will go on to contaminate the transformer oil and in turn the insulation media.

Dimensions and Specifications

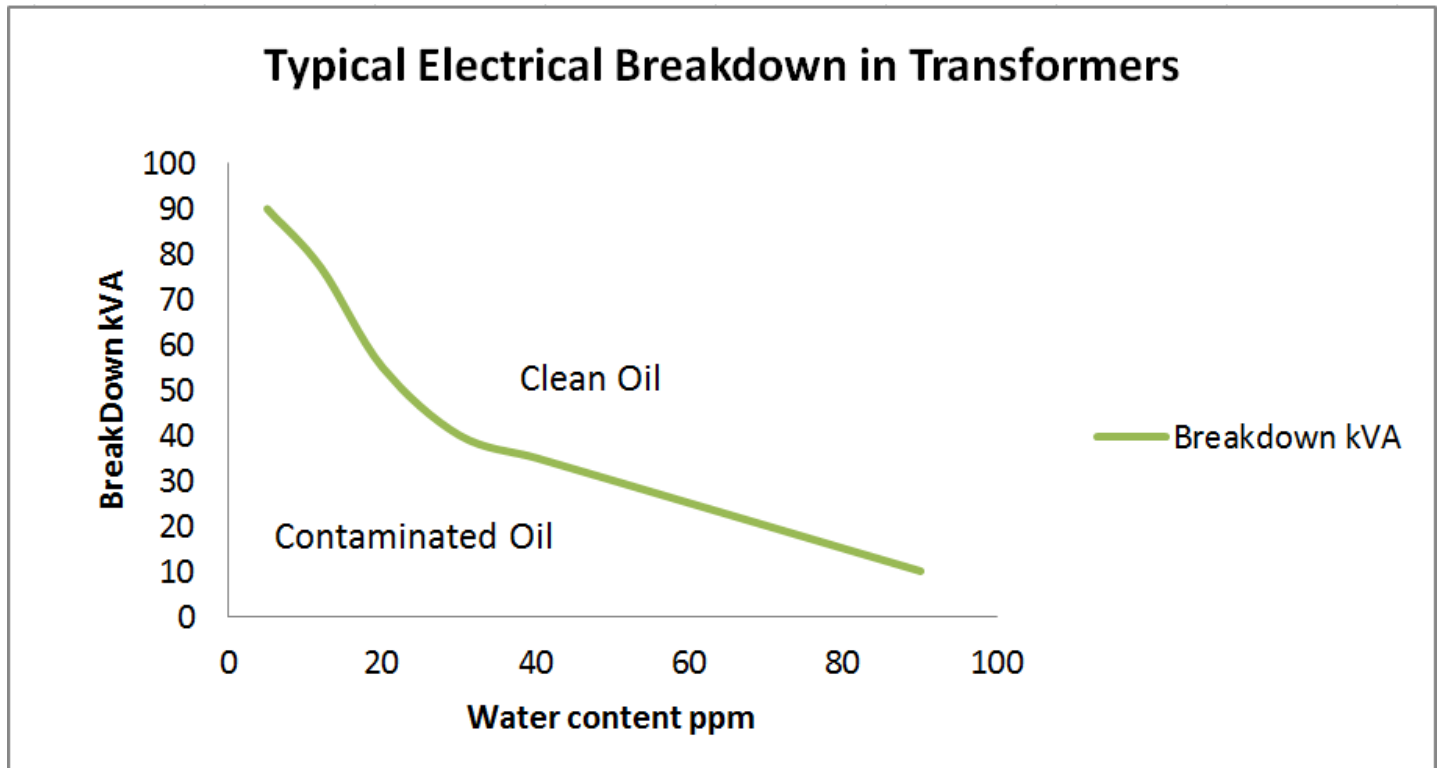


Material	Mild steel with passivation and epoxy powder coating finish	Desiccant capacity	150 grams at 30% RH 15% by weight
Connection	Flange, pipe thread or remote connection	Reactivation control temperature	90 °C ± 10 °C
Mounting modes	On line or direct floor mounting	Saturation indicator	RH display
IP Rating	IP63	Maximum pressure	1 psi
Operating temperature	-20 °C to +60 °C	Maximum flow rate	20 litres/min (Peak)
Humidity	95% RH non condensing	Reactivation time	Nominal 6 hours
Desiccant type	Non indicating silica gel	Power consumption	230 volts 5 amps or 100 volts 10 amps
Desiccant contents	RT1 1 kilograms RT2 2 kilograms	Weight	17 kilograms

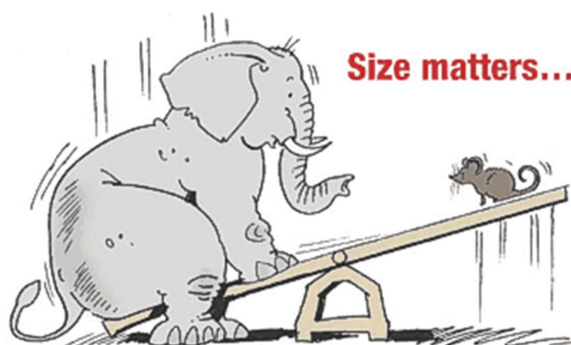
Size and Lifecycle

MVa	Oil Content (L)	Daily Breather Rate (L)	Operational Use in days
9	12,000	140	69
30	23,000	280	46
60	35,000	420	23

Climate conditions 20°C @ 50%



Envirogel Desiccant



**Doubling your desiccant life coupled with reduced maintenance
DOESN'T MEAN TWICE THE COST!**



Size R can be replaced
with **Size R1**



Size V can be replaced
with **Size W**



Size Y can be replaced
with **Size Z**

Brownell supply sealed replacement charges of Envirogel desiccant in the following sizes:

Part No	Refill Qty	Packaging
BL/D6331/01	0.5kg	Metal Foil Laminate Pouch
BL/D6331/02	1 kg	Metal Foil Laminate Pouch
BL/D6331/03	3kg	HDPE Resealable Bottle
BL/D11845	5kg	HDPE Resealable Bottle
BL/D10736	10kg	HDPE Resealable Bottle
BL/D6331/05	12.5kg	HDPE Resealable Bucket
BL/D6331/06	25kg	HDPE Resealable Drum

