

DryTrans Engineering Decision System

From Data → Insight → Decision → Control

Continuous Moisture Control. Extended Transformer Life.

1 DATA INPUT

Comprehensive Transformer Diagnostics

MOISTURE & INSULATION STATE

- Moisture in Oil (ppm)
- Relative Saturation (RS%)
- Water Activity (aw)
- Estimated Paper Moisture (%)

ELECTRICAL PERFORMANCE

- Breakdown Voltage (BDV)
- Tan δ (at 90°C)
- Resistivity

AGING & CHEMISTRY (LIFE CONSUMPTION)

- Furan (2-FAL)
- Methanol
- Acidity (TAN)
- Interfacial Tension (IFT)

FAULT DIAGNOSTICS (FAILURE RISK)

- Dissolved Gas Analysis (DGA) (H₂, CH₄, C₂H₄, C₂H₆, C₂H₂)
- CO / CO₂

Additional Inputs



2 PROCESSING ENGINE

Intelligent Analysis & Scoring

PARAMETER SCORING

Each Parameter Scored



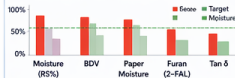
HEALTH INDEX CALCULATION

Weighted Overall Health Index



GAP ANALYSIS (BEFORE vs TARGET)

Distance from Ideal / Recommended Values



TREND & EQUILIBRIUM ANALYSIS



3 DECISION LAYER

Risk Evaluation & Decision Matrix

INSTALL DRYTRANS DECISION MATRIX

Condition	Indicators (Examples)	Decision
CRITICAL (Install Immediately)	RS % > 60% Paper Moisture > 3% BDV < 40 kV Increasing Moisture Trend	INSTALL DRYTRANS IMMEDIATELY ➔
AT RISK (Plan Installation)	RS % 30–60% Paper Moisture 2–3% BDV 40–50 kV Stable / High Moisture	PLAN INSTALLATION ➔
GOOD (Monitor)	RS % < 30% Paper Moisture < 2% BDV > 50 kV Stable Moisture	MONITOR MONITORING ➔

KEY RISK DRIVERS (Auto-Identified)

- High Moisture (RS%, Paper Moisture) ↑
- Low BDV / Dielectric Strength ↑↑
- Aging (Furan, Methanol, TAN) ↑↑
- Moisture Ingress / Breather Condition ↑

4 RECOMMENDATIONS & OUTCOMES

Actionable Insights for Utilities

UTILITY-STYLE RECOMMENDATION

- STRATEGIC ACTION (HIGH PRIORITY)**
Install DryTrans Moisture Management System for continuous moisture control and risk mitigation.
- CORRECTIVE ACTION (MEDIUM PRIORITY)**
 - Breather replacement / regeneration
 - Leak sealing & gasket improvement
 - Oil filtration / degassing
 - Load management (if required)
- MONITOR (LOW PRIORITY)**
 - Continue periodic testing
 - Maintain good operating practices
 - Monitor trends

EXPECTED OUTCOMES WITH DRYTRANS

- Lower Moisture Equilibrium
- Higher Dielectric Strength
- Slower Aging Rate
- Lower Failure Risk
- Extended Transformer Life

THE DRYTRANS ADVANTAGE

- Controls Moisture Continuously**
Maintains oil-paper equilibrium at safe levels
- Improves Dielectric Performance**
Enhances BDV and insulation reliability
- Slows Insulation Aging**
Reduces aging by controlling moisture & chemical reactions
- Reduces Failure Risk**
Mitigates moisture-driven breakdowns and faults
- Extends Asset Life**
Increases transformer life, postpones costly replacements

“Diagnostics tell you what is happening. This system tells you what to do next. DryTrans enables continuous control.”



COMPREHENSIVE DATA
Capture all critical parameters



INTELLIGENT ANALYSIS
Convert data into insights



SMART DECISIONS
Select the right action



CONTINUOUS CONTROL
Achieve reliability & extend life