



# Kelman MULTITRANS

## On-line DGA & moisture for 3x single phase transformer

Dissolved Gas Analysis (DGA) and moisture measurement of the insulating oil are recognized as the most important tests for the condition assessment of transformers. Multi-gas DGA has traditionally been confined to the laboratory environment and infrequent off-line manual sampling, forming part of time based maintenance strategies. As the average age of transformers globally continues to rise, the possibility of rapid ageing, unplanned outages and even catastrophic failure between off-line tests also increases, leading many asset owners to adopt on-line DGA monitoring of equipment to increase network reliability.

The Kelman™ MULTITRANS offers discrete multigas on-line DGA and moisture monitoring for three adjacent single phase transformer tanks. Utilizing photo-acoustic spectroscopy (PAS) measurement technology, well suited to field application, it provides laboratory challenging levels of precision and repeatability. Full 9 gas oil sampling and analysis can be performed as often as every hour on a single tank and up to once every three hours on the three tank configuration.

Through close integration with GE's powerful Perception™ software suite and/or user's own software, historian and SCADA systems, the MULTITRANS offers full gas-in-oil trending, analysis and diagnostic capabilities including various diagnostic methods prescribed by international standards.

### Key Benefits

- Remote insight into transformer condition enables rapid action to correct any issue detected
- Discrete measurement of all fault gases facilitates full remote diagnostic without having to go to site and take an oil sample
- Cost effective solution for 3 adjacent single phase transformer configuration
- Faults can be detected in their infancy and outage scheduled when less inconvenient and less costly (normal working hours)
- Aids condition based and predictive maintenance strategies
- Compatible with mineral insulating oils or ester based oils (natural and synthetic)

### Applications

Knowledge of the condition of transformers is essential for all electrical networks and on-line monitoring of transformers is an increasingly vital component of successful asset management programs. The information provided by multi-gas on-line DGA allows valuable asset capabilities to be maximized and expensive failures to be avoided.

MULTITRANS is best suited for monitoring large, system critical or already compromised transformers, arranged in a 3 single phase tank configuration, with a view to extending asset life, preventing unexpected failure and operating on a condition based maintenance schedule.

## Cutting Edge Technology

- Nine gases plus moisture in a single monitor
- Automated headspace gas extraction and state of the art photo-acoustic spectroscopy (PAS) measurement technology
- No carrier or calibration gases required
- Long service life with minimal maintenance

## Ease of Use

- Easy installation: no outages required reducing expense and inconvenience for user
- No consumables and minimal maintenance reduces running costs and site visits
- Extensive remote communications options and protocols available (including IEC® 61850)
- Sampling frequency is user-configurable, up to once per hour
- Can be connected to normal AC power or protected DC supply
- Supports new lower flammability ester based oils as well as mineral insulation oils

## Configurable Alerts

- Two alarm levels (one for Caution and one for Alarm) can be set to show increasing severity
- Sunlight visible front panel LED arrays
- Six user configurable alarm relay contacts
- Caution and alarm modes can be used to automatically increase sampling frequency

## Integrated Solution

- Partners Intellix™ MO 150 and BMT 300 products and combines well with some of the GE Industrial Communication products
- Can be configured by and data downloaded to GE's Perception software which provides graphical gas level trending and diagnostic methods based on International standards
- Also integrates to Perception Fleet to provide health/risk ranking of the monitored transformers compared to other fleet assets



