

### Product Overview

Accurate knowledge of the condition of transformers is essential for all electrical networks and on-line monitoring of critical transformers is increasingly vital. This information allows valuable assets to be maximised and expensive failures to be avoided.

Dissolved Gas Analysis (DGA) and moisture measurement of the insulation oil are recognised as the most important tests for condition assessment of transformers.

### Features & Benefits

The MINITRANS is a Cost-Effective On-Line DGA Unit giving essential insight into the condition of transformers.

The MINITRANS provides reliable information and represents an invaluable tool for Asset Management: Along with essential moisture content, the measured gases provide information on critical arcing, cellulose degradation and general fault activity.

- Avoid costly unplanned outages.
- Transformer faults detected in their infancy.
- Transformer output optimized safely, maximising asset.
- Transformer ageing can be calculated.
- Type of fault can be classified from results.

#### DGA & Water

Three gases plus moisture.

#### No Consumables

No carrier gases or calibration gases required.

#### Minimal Maintenance

Reduces expense and inconvenience for user.

#### Comms Options

Extensive local and remote communications options.



#### Reliable Gas Extraction

No use of membranes or vacuum extraction.

#### Sampling Rate

Sampling rates are configurable from daily to hourly. User configurable Caution and Alarm Modes can be used to automatically increase the sampling rate.

#### Kelman PERCEPTION\*

Advanced asset management suite providing sophisticated graphical trending & diagnostic analysis of results.

#### Load Monitoring

Allows results to be analysed with the loading of the transformer.

#### Easy Installation

No outages required.

#### Local Display

LCD Display provides up to date information on site.

#### Alarm Settings

Sophisticated programmable alarm system.

## Technical Specifications

PARAMETER (compound)	VALUE/MEETS (measurement range)
Hydrogen (H <sub>2</sub> )	5 - 5,000 ppm
Carbon Monoxide (CO)	10 - 50,000 ppm
Acetylene (C <sub>2</sub> H <sub>2</sub> )	3 - 50,000 ppm
Water	0-100% RS (given in ppm)
Accuracy	± 10% or ± LDL (whichever is greater)

### ENVIRONMENTAL

Temperature Range	-35 to 55°C (-31 to 131°F)
Oil Temperature Range	-10 to 100°C (-14 to 212°F)
Power Supply	90 – 264 Vac; 47 - 63Hz; 150W; 6A max
Operating Humidity	10 - 95% RH non-condensing
Enclosure	IP55
Weight	Less than 35 Kg (80 lbs)
Single Phase Alarm Relays	NO and NC provided, 250 VAC 1A, 1A 30 VDC
Measurement Frequency	Variable - 1 per hour to 1 per day



## Technical Features

- Uses photo-acoustic spectroscopy to give highly reliable results. Field proven in over ninety countries worldwide.
- Three target gases plus moisture measured.
- Full embedded processor – over two years of data at a default sampling rate of six-hourly, stored internally.
- Non-volatile memory storage to prevent loss of data.
- Discrete sampling gives more rapid response to gas rises. No 'averaging' of DGA results.

## Alarms

- Two Sunlight Visible front panel LED Arrays (Red and Green) and a user configurable Relay contact.
- All alarms can be set or changed locally or remotely using Kelman **PERCEPTION** PC Software.
- Six alarm setting screens or scenarios are available, which can set alarms based on the level of the three gases/moisture, and rates of change for each gas.
- Each alarm setting screen can activate the Alarm relays or send a SMS message if equipped with the optional cellular GSM or CDMA modem.
- Single phase Alarm Relays: NO and NC provided, 250 VAC 1A, 30 VDC 1A.
- Caution mode and alarm mode can be used to increase sampling frequency.
- The alarm results of each screen are independent of the other circuits and alarm setting screens.

## Communications

- Two separate channels for remote communications, plus local weatherproof USB connection and Ethernet connection.
- Communications protocols supported include MODBUS®, MODBUS/TCP, DNP3.0 and IEC®61850.
- Modules available for connection via RS232, RS485, Ethernet, PSTN modem and GSM or CDMA wireless modems.

GE Energy  
Lissie Industrial Estate East  
Lissie Road  
Lisburn BT28 2RE  
United Kingdom  
+44 (0) 2892622915

[www.kelman.co.uk](http://www.kelman.co.uk)  
[www.ge.com/energy](http://www.ge.com/energy)

©2009 General Electric Company. All rights reserved  
\* Trademarks of General Electric Company.  
MODBUS is a registered trademark of Schneider Automation, Inc.  
IEC is a registered trademark of Commission Electrotechnique Internationale.  
GEA17281 (02/09)



imagination at work