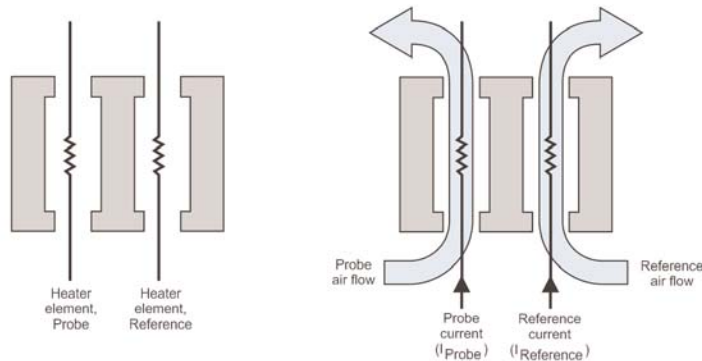


## 10.0 Technology

The Leak Detector measurement is based on thermal conductivity comparisons between the probe air and a reference air. The device employs a dual thermistor technology which measures the ratio of [probe]:[reference] heat exchange values and displays the results on an LED scale (Figure 4). Under ideal operating conditions, a ratio of 1:1 indicates identical air samples for both [probe] and [reference], and therefore no leak is present.

**Figure 4** Schematic layout of the Leak Detector technology.



**LEFT:** Dual analysis is achieved with heater elements positioned in separate flow chambers.

**RIGHT:** Probe and reference air streams are simultaneously monitored for thermal conductivity. Differences in air composition are indicated by differences in the heater element currents.

Because of slight differences in air temperature and/or humidity between the reference inlet (Figure 1) and the probe tip, a small response indicated by a single red or yellow LED light is generally insufficient to positively identify a gas leak. Small to moderate leaks are reliably indicated with four red LED lights, larger leaks are indicated with all red LED lights or yellow LED lights lit and the continuous alarm is audible.