

# IR-em

## Gas analyser - (NDIR)



### KEY FEATURES

- *Detects all HCFC's, HFC's and Ammonia*
- *Highly selective – No false alarms*
- *Aspirated system with high capacity pump enabling sample tube lengths up to 150m*
- *Monitors up to 16 zones*
- *Simple 5 key user interface with password protection*
- *Individual zone naming and alarm thresholds*
- *Optional fail-safe alarm operation*
- *Self-diagnostics detect system faults*
- *Historic data & alarm logs*

## - Gas analyser for HFC and Ammonia

### General

The IR-em offers intelligent, reliable and accurate gas monitoring for all HCFC's, HFC's and Ammonia. Its high sensitivity and selectivity ensures gas leaks are detected at the earliest opportunity. Since 1997 companies have installed the IR-em for safety, economical and environmental reasons. Its reliability and effectiveness are unquestionable with most of our customers purchasing multiple units. The IR-em operates independently but can be networked to other equipment via an RS 485 network connection or to a PC via an Ethernet interface. The Ethernet interface provides status and historic data together with graphs which are displayed on HTML pages and viewed via a web browser.

### Zone Based Operation

A high capacity vacuum pump sequentially samples air from up to 16 zones through 6mm O/D colour coded pipe work. The air samples pass through a valve manifold and water trap arrangement before entering the sample cell where the analysis is conducted. The result of the analysis is displayed upon the backlit LCD screen together with the time/date and name assigned to the zone. Previous measurements are retained on the IR-em enabling technicians to identify leak patterns and rectify problems easier.

### Technical data:

|                            |   |
|----------------------------|---|
| Gas detected:              | HFC (HCFC), Ammonia (NH <sub>3</sub> )                              |
| Detection principle:       | Non-dispersive infrared (NDIR)                                      |
| Range:                     | 5 – 25000 ppm depending on gas type (display, max 9999 ppm)         |
| Accuracy:                  | 5% 0 to 100 ppm,<br>10% from 100 to 1000 ppm,                       |
| Sample system:             | Colour coded 6mm O/D Plastic tube, up to 150m lengths each          |
| Indications:               | LCD display, 3 LED's, buzzer  |
| Alarm levels:              | 3 levels, Spill, Leak and zone                                      |
| Outputs (relays):          | 2 pairs of volt free alarm contacts                                 |
| Outputs (digital/channel): | 0/+ 5VDC, for zone alarm<br>or                                      |
| Outputs (analogue):        | 0 to 4,7 (5)VDC output per channel, (corresponding to 0 - 1200 ppm) |
| Operating environment:     | 0°C to +47°C, 0-95% Rh (non condensing)                             |
| Power supply:              | 115 or 230V AC, 50/60Hz<br>Max 450W                                 |
| Dimensions:                | 327x375x156mm   |
| Enclosure:                 | Metal   |
| Weight:                    | 13,1 kg   |

## High Accuracy

Because the analyser searches for the unique infrared 'signature' of the refrigerant nuisance alarms from contaminant gases are eliminated. The dual channel Non-dispersive Infrared techniques employed in the IR-em are commonly used in automotive and medical applications where accuracy and reliability are essential. This technology enables gas concentrations in the Parts Per Million levels to be accurately measured ensuring that leaks are detected early before any appreciable loss of gas occurs with the resultant safety and financial implications.

## Alarms

Each zone can be assigned up to three alarm thresholds. The leak and zone alarm thresholds include an optional delay which ensures the gas is detected on multiple consecutive cycles before further action. Full details of the alarm including the concentration measured together with the assigned zone name, date and time are recorded in the alarm log. The analyser also monitors the flow rates on a constant basis from each zone and in the event that the air flow is unduly restricted an alarm is raised.


## Interfaces

The IR-em has two pairs of volt free alarm contacts, which can be configured, to operate in the event of a fault, leak or spill condition. In addition the unit has an RS 485 serial port for connection to remote display/management systems or to our Viewpoint which generates HTML pages which can be viewed via a web browser. There is also a digital output allocated to each of the 16 channels which is energised in the event of the zone threshold being exceeded. These digital outputs can be interfaced with auxiliary equipment such as a zone alarm panel.

The digital outputs can also be set to give a 0 .. 5VDC analogue output signal, corresponding to 0 to 1200 ppm/channel.

## Self-Diagnostics

Every 24-hours the system conducts a self-test to verify both the software and mechanical operation of the unit. Any problems relating to the operating system or leaks within the internal plumbing will be determined and details entered in the alarm log for immediate action.

| Order code  | Model                  | Description   |  |  |
|---|------------------------|---|--|--|
|  <h2 style="margin: 0;">IR-em</h2> |                        |   |  |  |
| 82-102  | IR-em - 8 ch HFC       | Aspirated 8 Channel HCFC/HFC Refrigerant monitoring System                    |  |  |
| 82-104  | IR-em - 16 ch HFC      | Aspirated 16 Channel HCFC/HFC Refrigerant monitoring System                   |  |  |
| 82-106  | IR-em - 8 ch NH3       | Aspirated 8 Channel Ammonia Refrigerant monitoring System                     |  |  |
| 82-108  | IR-em - 16 ch NH3      | Aspirated 16 Channel Ammonia Refrigerant monitoring System                    |  |  |
| <b>Accessories</b>  |                        |   |  |  |
|   | Sample tube            | Supplied in 100m drums in 16 colours  |  |  |
|   | End of line filter     |   |  |  |
|   | Inline Filter          |   |  |  |
|   | 2 Way Manifold         |   |  |  |
|   | 4 Way Manifold         |   |  |  |
|   | VIEWPOINT              | "Black box" which generates HTML pages which can be viewed via a web browser. |  |  |
|   | Strobe Interface panel | Provides 24 volt output for warning beacons for up to 8 channels              |  |  |
|   | Sample tube filter     |   |  |  |
|   | Sample tube lenses     |   |  |  |
|   | Side panel filter      |   |  |  |
|   | Air pump, replacement  |   |  |  |
|   | Relay Alarm Panel      |   |  |  |