



# CHILLGARD RT

## *Refrigerant Leak Detection Monitor*

The CHILLGARD RT is suitable for all industrial refrigeration systems or chillers be it production or research operations, food cold storage or meat packing operations. It allows precise monitoring of the smallest refrigerant concentrations and detection of leak locations. Thus it protects man and environment against these hazardous agents, prevents poisoning of the cold food and helps to save costs which would incur from the loss of refrigerants.

Refrigerants that endanger the ozone layer are still frequently used. These will disappear in the next few years and they will be replaced by environmentally friendly ammonia.

The CHILLGARD RT already takes this development into account today.

### **Design and Function**

A monitoring system which is designed to measure in the range of a few parts per million, must meet high requirements.

The CHILLGARD RT is capable of this.

Water vapour in the gas sample, a known problem for many infrared analysers, has no effect on the CHILLGARD RT.

The use of photoacoustics eliminates the need for a reference chamber, resulting in high zero point stability and sensitivity stability.

The instrument works for months with very little deviation from the zero point. Due to its excellent detector stability, unlike other products, the zero point adjustment can be reduced to once a year.

The CHILLGARD RT generates the signals required to initiate audible and visible alarms. Refrigerants that leak from chillers, pipes or fittings are detected precisely.

## Features and Benefits

- Reliable, precise and stable
- Detects concentrations as low as 1 ppm
- Prevents loss of refrigerants and poisoning of the cold goods
- Easy to install, adjust and maintain
- Highly developed IR measuring technology at comparatively low cost
- Operation over a wide temperature range
- Large 2-lines x 20 character vacuum fluorescent display which shows alarm indications and actual gas concentration
- 3 adjustable alarm levels
- Relay outputs for each alarm level (latching/nonlatching)
- Instruments are available with 1 channel, 4 channels or 8 channels
- Air humidity, a problem for IR analysers, has no effect on the new MSA CHILLGARD RT
- Measurement according to the principle of photoacoustic infrared absorption in the range of 0...1000 ppm. This permits monitoring below the TLV of 10 ppm for HCFC 123 and much higher concentrations in case of an accident.

## Measuring Principle

The CHILLGARD RT measures the gas of interest by the principle of infrared photoacoustic absorption.

Sample gas enters the monitor measuring cell and is exposed to infrared. The sample gas absorbs some of the infrared and this absorbed energy is a function of the gas concentration.

The absorbed radiation has a unique spectrum for each gas making it possible to detect refrigerants selectively using special infrared filters. When the infrared is modulated a pressure change is generated in the measuring cell. This photoacoustic pressure signal is measured with a sensitive condenser microphone. The signal from the microphone is electronically filtered, linearised and amplified to provide a readout of the actual gas concentration.

## Technical Data

### Measurable Gases

e.g. R 11, R 12, R 13, R 22, R 113, R 114, R 123, R 124, R 125, R 134A, R 152a, R 402A, R 404A, R 407c, R 500, R 502, R 507, R 508B, NH<sub>3</sub>

### Measuring Range

0...1000 ppm

### Accuracy

0...100 ppm ± 1 ppm  
100...1000 ppm ± 10% of the reading

### Linearity

0...50 ppm ± 1 ppm (ammonia ± 2 ppm),  
51...1000 ppm ± 10% of reading

### Sensitivity

1 ppm

### Resolution

1 ppm

### Response Time

70 s for 90% of the final reading, based on a single point instrument

### Operating Temperature

0 °C...+ 50 °C

### Temperature Effect

± 0.3% of reading per °C

### Relative Humidity

0...95% RH, non-condensing,  
no effect on the reading

### Sample Flow Rate

0.75 l/min

## Operation

**Power Supply** 120 VAC ± 10%, 0.56 A; 240 VAC ± 10%, 0.30 A

**Alarm Relays** 3 relays, 240 VAC, 8 A resistive

**Analog Output** 4...20 mA, 0...10 V for channel recognition

### Maximum Signal Load

0...10 V into 2K ohm or 4...20 mA into 1K ohm

### Sample Tubing Connector

6 mm OD, 3 mm ID

**Flow Switch** activates at flow < 0,5 l/min

### Multipoint Sequencer Option

4 or 8 measuring points

### Maximum Sample Tubing Length

45 m (per measuring point)

### Dimensions (height x width x depth)

460 x 410 x 180 mm

### Weight

20 kg



Thank you for reading this data sheet.

For pricing or for further information, please contact us at our UK Office, using the details below.



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Please note - Product designs and specifications are subject to change without notice. The user is responsible for determining the suitability of this product.