

# MSA Chillgard® RT

## Photoacoustic Infrared Refrigerant Monitor



## The industry standard for refrigerant leak detection monitors.

The Chillgard RT Photoacoustic Infrared Refrigerant Monitor provides economical, low-level monitoring of refrigerant gases used in most refrigeration systems or chillers.

Many chillers still use the older ozone-depleting refrigerants which are being phased out. This and a Federally-imposed excise tax have driven up the replacement cost, making it essential to detect leaks as low as 1 ppm. Without the capability to monitor down to this low level, leaking refrigerant gases can go undetected for long periods of time.

Whether you are using the older ozone-depleting refrigerants or the newer blends, replacement cost of refrigerants is expensive. The Chillgard RT Monitor saves operating costs by detecting a leak early enough to prevent a major loss of refrigerant gas.

ANSI/ASHRAE 15 requires mechanical equipment room leak detectors because of these factors. Monitoring for refrigerant gases is now a necessity.

### Sensor Technology

The Chillgard RT Monitor utilizes very stable and highly selective photoacoustic infrared (PIR) technology to sense refrigerant gases at levels as low as 1 part-per-million.

The Chillgard RT Monitor can operate for months with virtually no zero drift. Its inherent stability eliminates the requirement of various auto-zeroing techniques which take the monitor "off-line" at regular intervals, leaving the area unprotected.

The Chillgard RT Monitor has a high immunity to interferants commonly found in mechanical equipment rooms such as cleaning agents and solvents. There is also no effect due to changes in humidity, a common problem with all other sensor technologies. Both are typical sources of false alarms when other sensing technologies are in use.

### UL Approved

The Chillgard RT Refrigerant Monitor has been listed to proposed UL 2075. This assures not only protection from fire and shock hazards, but also assures performance of the instrument to the specifications listed.

### Features

- Detectability down to 1 ppm
- Easy to install, operate and maintain
- Operates over a wide temperature range
- Complies with ANSI/ASHRAE 15
- 2-line x 20-character vacuum fluorescent display which shows alarm indications and actual gas concentration
- Three alarm levels
- Relay outputs for each alarm level
- Password protection
- Can be expanded with the Multipoint Sequencer to monitor up to 8 locations.

### Applications

Common refrigerant gases used in industries can also be monitored. These include:

- Propellant filling operations
- Solvent cleaning stations
- Cold storage and transport facilities
- Meat packing plants
- Supermarkets and refrigerant storage locations.

### Expandability

Simply by adding the Multipoint Sequencer, the Chillgard RT Refrigerant Monitor can be expanded to monitor up to 8 locations. The results are:

- Refrigerant gas monitoring is now more cost effective, especially when monitoring large areas or multiple locations or chillers
- The fastest possible response to any leak or spill is obtained
- Fresh sample is pumped from locations up to 500 feet for each sample.

### Single or Multiple Refrigerants

Most installations require detection for one specific type of refrigerant. However, some mechanical equipment rooms may have multiple chillers operating on more than one type of refrigerant or the possibility for the addition of another gas in the future. For these applications a Chillgard RT Monitor with multigas capability can be installed to detect each type of refrigerant on a per location basis.

The multigas Chillgard RT Monitor allows the user to select from a menu of refrigerants for each sample line when the Multipoint Sequencer is installed. In this manner, any of the available selections from the menu can be applied to each line. If the particular refrigerant is drawn into the corresponding sample line, the part per million value and refrigerant type will be displayed.

## Simplicity

The Chillgard RT Monitor is easy to install and operate. Four (4) front-panel keys configure the entire system.

The front panel displays all alarm and trouble messages. If a trouble condition occurs, the message is clearly shown on the display and it indicates the type of trouble.

The display also indicates the monitored location and the corresponding gas concentration.

## Accessories

### Remote Relay Module

The Chillgard RT Remote Relay Module provides discrete relay outputs on a per-channel basis when the Multipoint Sequencer is in use. Relays can be utilized to provide a relay output for either Caution, Warning, Alarm, or all of these conditions. These relay outputs are commonly used to activate horns, strobes, or ventilation equipment for separate areas that are monitored by the Chillgard RT Multipoint Sequencer.

### Gas Monitor Remote Display

ASHRAE 15 requires remote entryway signalling at the entrance to mechanical equipment rooms. The Gas Monitor Remote Display is an ideal way to meet this requirement.

## Ordering Information

See Chillgard RT Assemble-To-Order (ATO) order form, Bulletin 0730-03.

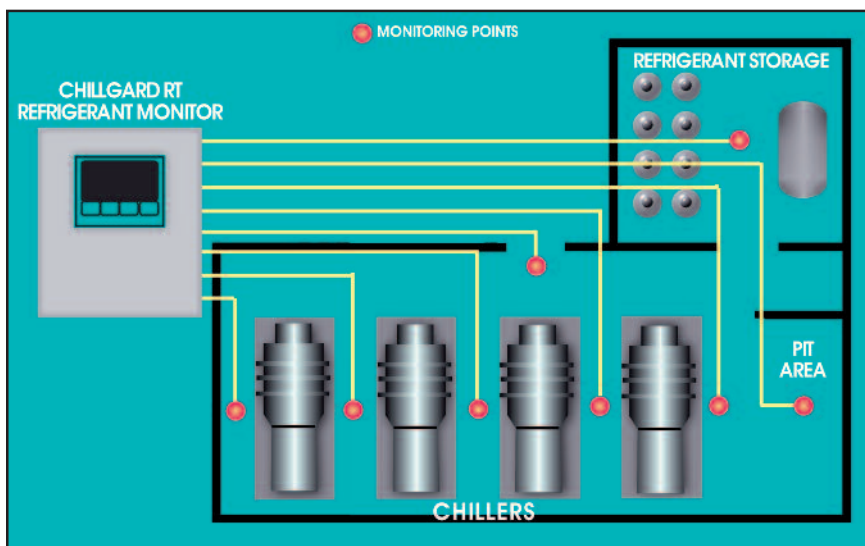
### Other Available Accessories:

Top Mounted Alarm Strobe

### Refrigerants Detected with the Chillgard RT Monitor

Ammonia	R-123	R-152a
R-11	R-1234yf	R-218
R-12	R-124	R-227
R-13	R-125	R-236a
R-22	R-134a	HFE-7100
R-23	R-141b	HFE-347e
R-32	R-142b	FM-200
R-113	R-143a	
R-114	R-142b	Any 400 series or 500 series refrigerant
	R-143a	

Detection of other refrigerants is possible. Contact an MSA representative at 1-800-MSA-INST for more information on your refrigerant monitoring needs.



Typical Chillgard RT Refrigerant Monitor Installation.



Chillgard RT Refrigerant Monitor Relay Module

Specifications	
Performance	
Stability:	0-50 ppm $\pm 1$ ppm (ammonia $\pm 2$ ppm) 51-1000 ppm $\pm 10\%$ reading
Linearity:	0-50 ppm $\pm 1$ ppm (ammonia $\pm 2$ ppm) 51-1000 ppm $\pm 10\%$ of reading
Response:	Updated instrument reading every 7 seconds, T90 <70 seconds
Operating temperature:	0-50°C, 32-122°F
Relative humidity:	0-95% non-condensing, no effect on reading
Sample flow rate:	0.75 liter/minute
Operating	
Power requirements:	120 VAC $\pm 10\%$ at 0.56 Amps, or 240 VAC $\pm 10\%$ at 0.3 Amps
Alarm relays:	3 relays @ 8 Amps resistive
Audible output:	Sonic Alert 75 db standard
Analog output:	0-10V, and 4-20mA isolated sourcing
Serial output:	RS-232
Maximum signal load:	0-10V into 2kOhms, or 4-20mA into 1kOhms
Sample tubing connections:	1/8" ID or 3/16" ID
Flow switch:	Activates at flow < 0.5 liter/min.
Performance, Multipoint Sequencer	
Maximum sampled points:	Eight
Maximum sampled tubing length:	150 ft. (1/8" ID tubing) 500 ft. (3/16" ID tubing)
Physical	
Dimensions:	18" H x 16" W x 7" D
Weight:	45 lb.
Remote Relay	
Communication:	RS-485
Wiring:	Twisted-pair shielded
Audible alert:	Piezo electric 75 db@5'
Operating power requirements:	120 VAC $\pm 10\%$ at 240 watts or 240 VAC $\pm 10\%$ at 120 watts
Relays-Operating temperature:	0-50°C, 32-122°F
Physical dimensions:	12" H x 14" W x 6" D
Weight:	25 lb. (0.453 kg.)



Distributed by:  
**Ampcontrol**  
 1300 267 373  
[customerservice@ampcontrolgroup.com](mailto:customerservice@ampcontrolgroup.com)  
[ampcontrolgroup.com](http://ampcontrolgroup.com)

**Note:** This bulletin contains only a general description of the products shown. While uses and performance capabilities are described, under no circumstances shall the products be used by untrained or unqualified individuals and not until the product instructions including any warnings or cautions provided have been thoroughly read and understood. Only they contain the complete and detailed information concerning proper use and care of these products.



**ID 07-2016-MC / March 2012**  
 © MSA 2012 Printed in U.S.A.

**Corporate Center**  
 1000 Cranberry Woods Drive,  
 Cranberry Township, PA 16066 USA  
 Phone 724-776-8600  
[www.MSAafety.com](http://www.MSAafety.com)  
**U.S. Customer Service Center**  
 Phone 1-800-MSA-INST  
 Fax 1-800-967-0398  
**MSA Canada**  
 Phone 1-800-672-2222  
 Fax 1-800-967-0398

**MSA Mexico**  
 Phone 01 800 672 7222  
 Fax 52-44 2227 3943  
**MSA International**  
 Phone 724-776-8626  
 Toll Free: 1-800-672-7777  
 FAX 724-741-1559

**Offices and representatives worldwide**  
 For further information:

