

# COOL AIR

INCORPORATED

# Ammonia Leak Detector

## Model LBW-420



**An affordable, dependable, and virtually maintenance-free detector manufactured by the leading supplier of quality ammonia refrigeration leak detectors**

### Standard Features

- Semi-conductor, long-life sensor cell
- Cleaner simple look, fewer LEDs
- Remove the "P" indicating PPM
- NO need to enter sensor group number
- Selectable display start point 0PPM or 25 PPM (d)
- Selectable Service Mode timeout 15 (d), 30, 45 or 60 minutes
- Auxiliary relay is for detector errors only (d), or it can be programmed to activate with the Low Alarm or High Alarm relays as well
- Certified by TÜV Rheinland of North America
- Made in the USA



(d) denotes default setting

### Available Options

- Remote sensor for safety relief vent line
- Remote sensor with box and 50 ft. of shielded cable (std.).  
Note: Remote sensor maximum distance is 500 ft.
- Indoor/Outdoor remote alarm light & horn unit
- ABS washdown/utility tube
- External service switch
- LCD door monitor
- Battery back-up

### Typical Applications

- Industrial coolers and freezers
- Compressor rooms
- Control rooms
- Loading docks
- Storage tank areas
- Production area
- Valve groups

### Integrates seamlessly with common industry automation and/or alarm systems

The LBW-420 Ammonia Leak Detector from Cool Air Incorporated has all the features you need to protect your personnel and product. It has a semi-conductor, long-life ammonia sensor cell that provides fast and accurate detection of ammonia gas. **The sensor cell will not deplete during an ammonia leak, from background ammonia vapors, or during testing &/or calibration.** The low alarm relay gives you time to react before ammonia levels reach the high alarm level.

**The front panel display** indicates ammonia concentration in parts per million (PPM). Front panel LEDs give you a quick indication of alarm status. The detector has a 4-20 mA analog output for PPM that will seamlessly integrate with your existing automation system. It also comes equipped with dry-contacts for communicating with common industry alarm systems. Additional dry-contacts allow the detector to operate auxiliary equipment such as exhaust fans, king valves, compressors, or additional alarm beacons/horns.

**To reduce nuisance alarms** during cleaning, servicing, testing, and/or calibration, the LBW-420 has a service mode that temporarily disables the detector's relays and 4-20 mA signal. To further enhance the value of this detector, Cool Air Incorporated offers these beneficial options: remote sensor that allows the local sensor to be remotely located up to 500 ft. maximum from the detector main box, remote sensor for relief line vents, indoor/outdoor remote alarm light & horn unit, ABS washdown/utility tube, external service switch, LCD door monitor, and battery back-up.

The LBW-420 detector is housed in a custom-made safety yellow, NEMA 4X, UL-listed, CSA, IEC, IP66 enclosure with viewing window.

The LBW-420 is manufactured in the USA and comes with our standard 36-month limited warranty.

# Ammonia Leak Detector Model LBW-420 Guide Specifications

## Specifications

**Ammonia detection sensitivity:** 0 to 1000 ppm

**Ranges:** 0-100, 0-250, 0-400 (std.), 0-500, 0-800, 0-1000

**Display:** 0.8", 7-segment LED, 4-digit readout;  
two LED lights: one for Low Alarm, one for High Alarm

**Controls:** Service mode switch, Pushbuttons (Up, Down and Enter), Rotary selector switch. Jumper.

**Ammonia sensor:** Metal oxide semiconductor. 833 mW integral heater. Alumina ceramic base. 100 mesh SUS 316 double gauge. Flame arrestor.

**Relays:** Qty. (3) 5A, form C (SPDT), normally-open, normally-closed; Low Alarm relay, High Alarm relay & programmable Auxiliary relay (errors only or activate with Low Alarm or High Alarm relays); Normal mode: energized in normally-open/closed state.

**Outputs:** Isolated dry-contacts for: Early Warning. Alarm & Auxiliary relays; 4-20 mA for ammonia concentration.

**Operating temperature:** -50°F to 125°F

**Operating humidity:** 5% to 95% RH, non-condensing; condensing kits available.

**Power requirements:** LBW-420: 115 VAC, 60 Hz;  
LBW-420-1: 24 VDC; LBW-420-2: 220/230/240 VAC, 50/60 Hz

**Approvals:** TUV Rheinland, cTUVusa, UL  
61010-1:2004 R7.05, CAN/CSA-C22.2 No.  
1010-1:2004.



**Outside Dimensions:** 9-1/2" H x 8" W x 4 1/4" D

**Weight:** 5 lbs.

**Note:** All dimensions and weights are approximate and should not be used for installation planning purposes.

**Enclosure:** Custom safety yellow, NEMA 4X rated, UL listed, CSA, IEC, IP66, with viewing window.

### Options:

- Remote sensor for safety relief vent line
- Remote sensor with box & 50 ft. of cable (std.)  
Note: Remote sensor maximum distance is 500 ft.
- Indoor/Outdoor remote alarm light & horn unit
- ABS washdown/utility tube
- External service switch
- LCD door monitor
- Battery back-up

## Suggested Specifications Text

Ammonia (NH<sub>3</sub>) Vapor Detector System

Provide ammonia leak detector(s), model LBW-420, as manufactured by Cool Air Incorporated, Ham Lake, Minnesota.

Ammonia leak detector(s) shall be stand-alone, wall-mounted unit(s), and have a solid-state instrument panel and sensor capable of sensing ammonia vapor concentrations of 0 to 1000 parts per million (PPM). Sensor shall not deplete during an ammonia leak, from background ammonia vapors, or during testing &/or calibration.

Detector(s) shall have a field-adjustable Early Warning (low alarm) setpoint and a field-adjustable Alarm (high alarm) setpoint.

Detector(s) shall contain no radioactive materials.

Detector(s) shall have: an early warning system, a front-panel progressive LED light tree display and digital readout providing ammonia concentration (in PPM), 4-20 mA analog output for PPM, dry-contacts for operating auxiliary equipment, and a service mode for avoiding nuisance alarms during cleaning, servicing, testing, &/or calibration.

Detector(s) shall be capable of initiating a supervised alarm, resulting in corrective action.

Optional remote sensor, remote sensor for safety relief vent line, remote alarm light & horn unit, ABS washdown/utility tube, external service switch, LCD door monitor, and battery back-up shall be available from the detector manufacturer.

Power supply shall be LBW-420: 115 VAC, 60 Hz; LBW-420-1: 24 VDC; LBW-420-2: 220/230/240 VAC, 50/60Hz

Detector(s) shall be certified by TUV Rheinland.

Detector(s) shall be manufactured in the USA.

## Warranty

The LBW-420 comes with a 36-month limited warranty on workmanship from the time of shipment. An optional 60-month limited warranty is available.

Cool Air Incorporated reserves the right to make changes in the design without notification.



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