

# PIL AMMONIA FLD 4000

## GENERAL PROPERTIES

|                       |                            |
|-----------------------|----------------------------|
| Target Gas            | Ammonia (NH <sub>3</sub> ) |
| Lower Detection Limit | 10 ppm                     |
| Accuracy              | ± 2.5% (min. 1 ppm)        |
| Resolution            | 1 ppm                      |
| Response Time         | <1 sec                     |
| T <sub>90</sub>       | <20 sec                    |

## ENCLOSURE CONSTRUCTION

|              |   |
|--------------|---|
| Material     | Powder Coated Steel                                   |
| Cable entry  | 3 x M20 (one blanking plug included for unused entry) |
| Dimensions   | 324x 134w x134h (mm)                                  |
| Weight       | 6.5 kg  |
| Display type | LCD Dot Matrix display; concentration and messages    |

## ELECTRICAL

|                                  |   |
|----------------------------------|---|
| Supply                           | 7-40 VDC 2.5 watts max  |
| 4-20 mA Output, 2 wire connector | External supply *Vmin - 40V   |
| Relays                           | 2 x 2 A @250VAC, NO and NC  |
| Communication                    | RS485 Protocol  |
| 4-20mA Output                    | 0mA open circuit<br>2mA fault<br>4mA zero gas level<br>20mA full range range gas level<br>22mA over-range gas level |
| Voltage Output                   | 0-5V, 10bit; on request   |
| Alarms                           | Can be set with standalone flashing lights and alarm<br>Can be integrated into Central Monitoring Systems           |

\*Vmin depends on external loop impedance at 22mA. eg Vmin = 12v5 @ 250 Ω loop impedance

## ENVIRONMENTAL

|                       |  |
|-----------------------|--|
| IP Rating             | IP54                                       |
| Operating Temperature | Typically +5°C to +40°C (For Engine Rooms) |
| Operating Humidity    | 0 to 95% (non condensing)                  |
| Operating Pressure    | 90 to 110 kPa                              |
| Storage Conditions    | 20°C to +40°C, < 80% humidity              |

## COMPLIANCE

|  |  |
|--|--|
| Electrical Safety  |  |
| AS/NZS CISPR 11: 2011  |  |
| EN 55011: 2010   |  |
| IEC/ CISPR 11 Ed 5.1: 2010   |  |
| FLD 4000 IS NOT AN EX RATED PRODUCT.                               |  |
| Complies with Refrigeration System Safety Guidelines AS/NZS 5149.3 |  |

## WARRANTY

2 year warranty (Subject to terms of service)

## Features

- No repeat calibration or sensor replacement required
- Periodic inspection recommended
- Fast response time
- High accuracy and reliability
- Integrates with SCADA
- Low Whole Life Costs



## FAQ

### 1. How can I be sure that the equipment won't move out of calibration?

The laser diodes are positioned on the ammonia absorption line via a temperature controlling circuit and the lasers internal injection current. Both these parameters are factory set and tightly controlled via feedback loops. Any kind of drift will result in an error signal/ notification from the device. The equipment is factory calibrated to gas concentrations and as long as the laser is positioned on the target gas absorption line, you can be sure that the device will not give incorrect gas readings.

### 2. Will dust, moisture and other particulates interfere with the laser and trigger a false alarm?

No, the system is calibrated to recognise a distinct absorption pattern that can only be generated by the target molecule. Note, that if dust, moisture or other particulates reach a critical level the system will trigger a fault (see error codes) which will notify the user that a fault in the system has occurred.

### 3. Can the units detect lower explosive limits (LEL)?

Currently the equipment is specifically built to detect minute levels of ammonia to ascertain toxicity levels only. We will have an ex rated product within months.

### 4. What happens if another gas has a very similar absorption feature as ammonia?

The lasers that we use are very specific to a single ammonia absorption line. The absorption lines are picked after extensive surveying and experimentation and the product virtually has no cross sensitivity to other gases.

### 5. What happens on a power failure? Does each unit need to be reset to the specific absorption feature? How is this done?

The system is programmed to fix the parameters on the laser to localise the ammonia absorption frequency line. When power is switched back on the unit will simply go back to the right absorption feature. The only time you will touch the device is while installing it :) (connect power and 4-20mA loop).

*We do recommend that your authorised person conduct a functional test on the machine once power has been restored.*