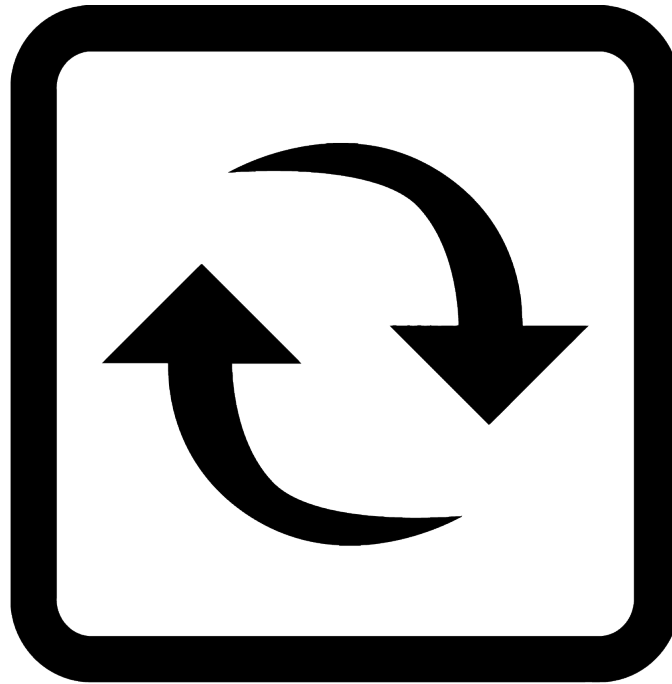


ENV-GAS-XX



INFRASENSING

Sensors Application Guide

I. Overview

Our ENV-GAS sensors detect the presence and level of specific gas concentrations in critical facilities.

This document aims to guide the user in installing our ENV-GAS sensors in your facilities and also to provide recommendations for sensor placement.

You may visit each gas sensor page through: https://infrasensing.com/sensors/sensor_list.asp#gas

II. What you need

- Power source (PoE or 12V DC)
- BASE-WIRED
- LAN cable
- ENV-GAS sensors

III. Recommended sensor placement

3.1. Rule of thumb

- Sensor placement may vary from location to location.
- Also based on other parameters like temperature which may change the density of the gases.
- They could be at breathing level when hot and be on the floor when cooled down.
- Gas types according to comparison to air:

Heavier	Similar	Lighter
Chlorine (CL2) Hydrogen Fluoride (HF) Hydrogen Chloride (HCL) Hydrogen Sulfide (H2S) Hexane (C6H14) Ozone (O3) Propane (C3H8) Pentane (C5H12) Propylene / Propene (C3H6) Refrigerants (R134a) Sulphur Dioxide (SO2)	Carbon Dioxide (CO2) Carbon Monoxide (CO) Ethylene (C2H4) Formaldehyde (CH2O) Oxygen (O2) Nitric Oxide (NO) Nitrogen Dioxide (NO2) Phosphine (PH3)	Ammonia (NH3) Hydrogen (H2) Methane (CH4)

3.2. Mounting

Any gas sensor should be mounted perpendicular to the airflow so that the gas flows over it, not into it.

Mounting heights for quickest response time:

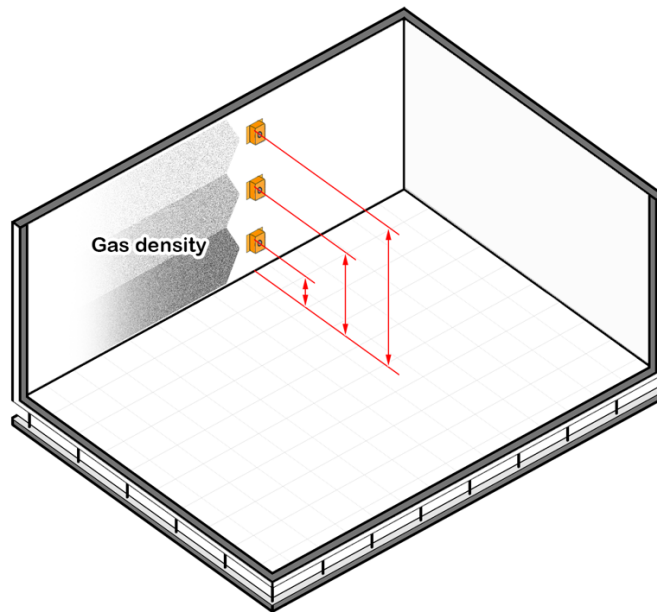
- lighter than air: near the ceiling
- similar to air: breathing zone (3-6ft/1.5-2m)
- heavier than air: near the floor (12in/30cm from the floor)

When monitoring refrigerant gasses or fire suppression gasses then those should be mounted as close as possible to the source for early warning.

3.3. Toxicity vs Response Time

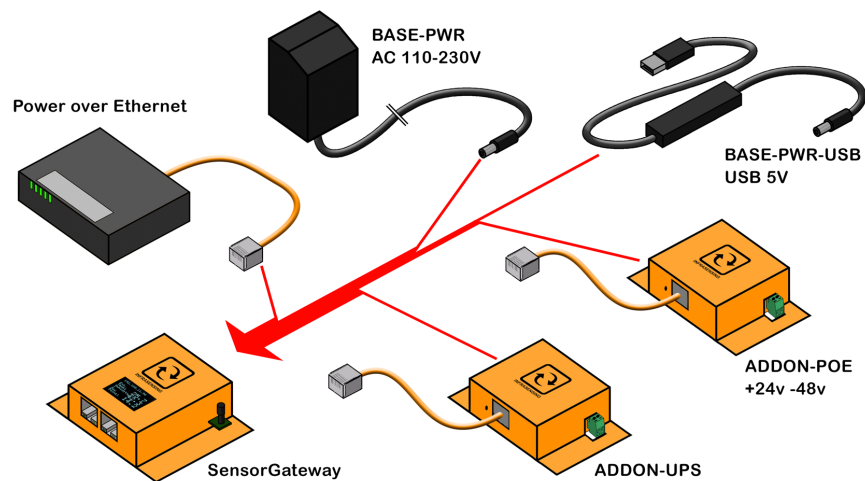
Any gas sensor mounting should be evaluated for its purpose. When one installs gas sensors to detect toxicity then such a sensor should be installed at breathing height rather than the above quickest response time height.

Gas sensors should not be obstructed by airflow. Beware of zones without air circulation, so-called dead air spots.



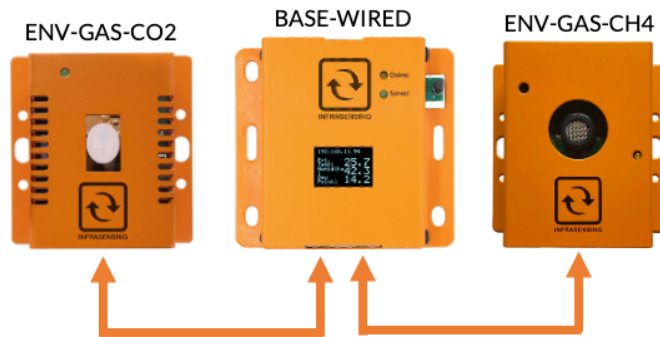
IV. Installation

4.1. Supply power to the BASE-WIRED via PoE (power over ethernet or 12V DC adapter/BASE-PWR)
Other power options include BASE-PWR-USB, ADDON-POE, and ADDON-UPS.



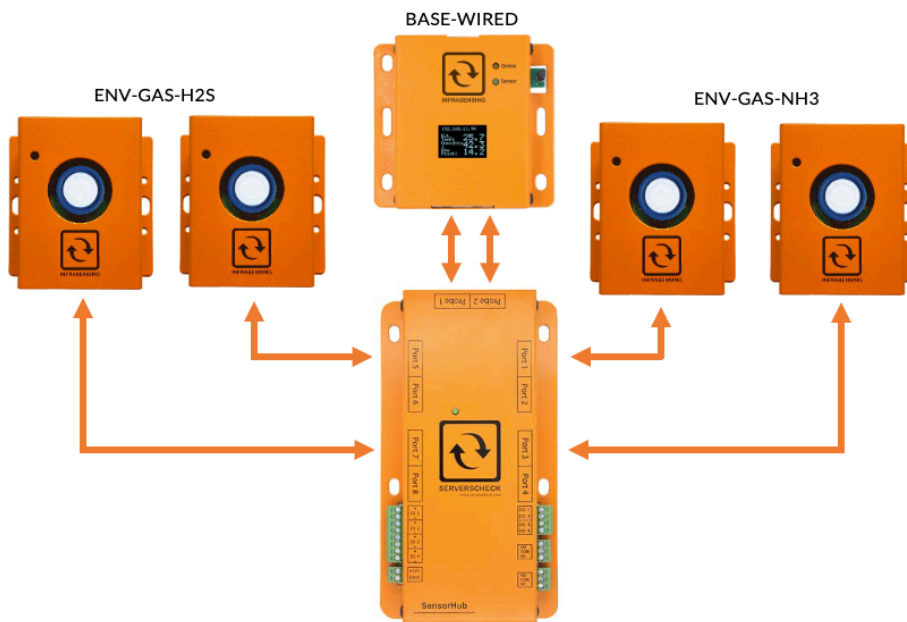
4.2. Connect the BASE-WIRED to the sensor probe.

- Via direct LAN connection



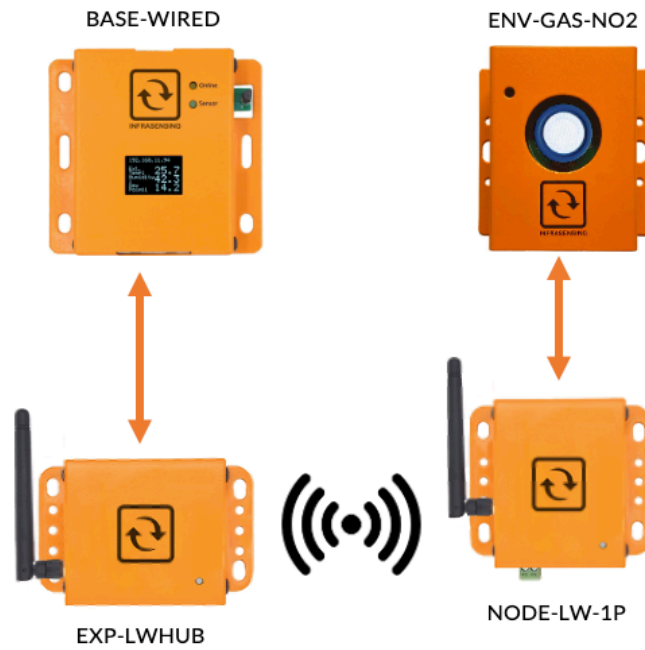
You can connect up to 2 sensor probes to the BASE-WIRED

- Via SensorHub(EXP-8HUB)



You can connect up to 8 sensor probes to the BASE-WIRED using the EXP-8HUB

- Via LoRa (EXP-LWHUB and NODE-LW-1P)



You can wirelessly connect your sensor probe to the BASE-WIRED, each LoRa hub can support up to 20 LoRa node. The LoRa Hub's power is supplied by the BASE-WIRED while the LoRa Node's power can be supplied by 12/24V DC or a USB-C type.