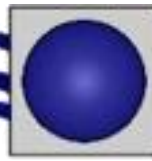




**BRASCH**  
ENVIRONMENTAL TECHNOLOGIES



**TECHNICAL AIR SYSTEMS, INC.**  
*A Comfortable Choice*

# **Gas Detection Introduction: Engineering Presentation**

# Introduction

**1964**

Jerry Brasch founds Brasch Manufacturing Company to make Electric Duct Heaters.



**2002**

Brasch Manufacturing releases the first generation of GSE detectors using new electrochemical sensing technology.



**2017**

Ray Adams purchases Brasch Manufacturing from Jerry Brasch.



**2021**

Brasch Environmental Technologies releases an entirely new product lineup with Generation 2.



**1994**

Brasch Manufacturing begins producing gas detectors with the BGS line.



**2008**

Brasch Manufacturing releases the new GDGP-A.



**2019**

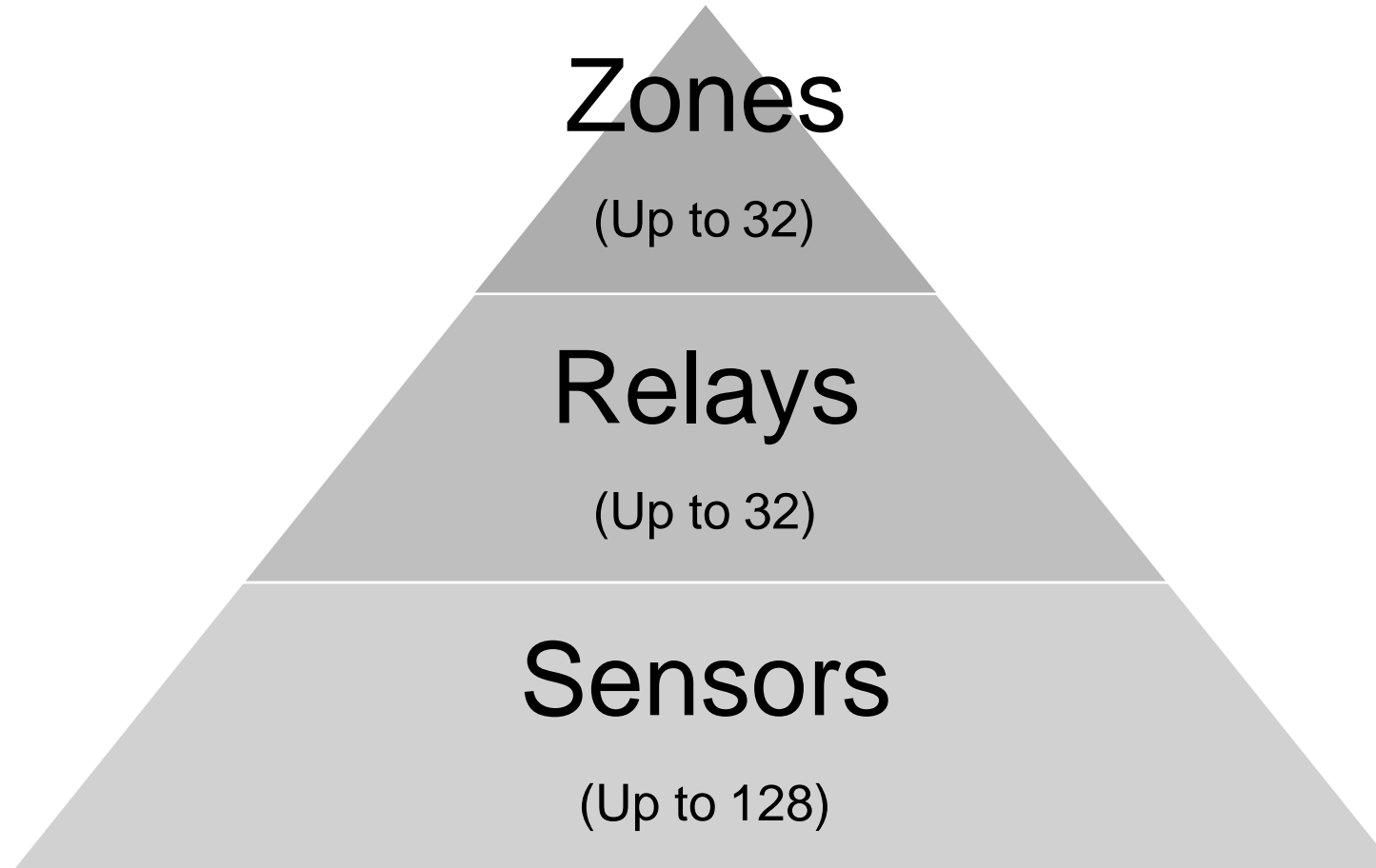
The Brasch Manufacturing electric duct heater division is sold to ASPEQ Heating. The gas detector division is retained and rebranded as Brasch Environmental Technologies.



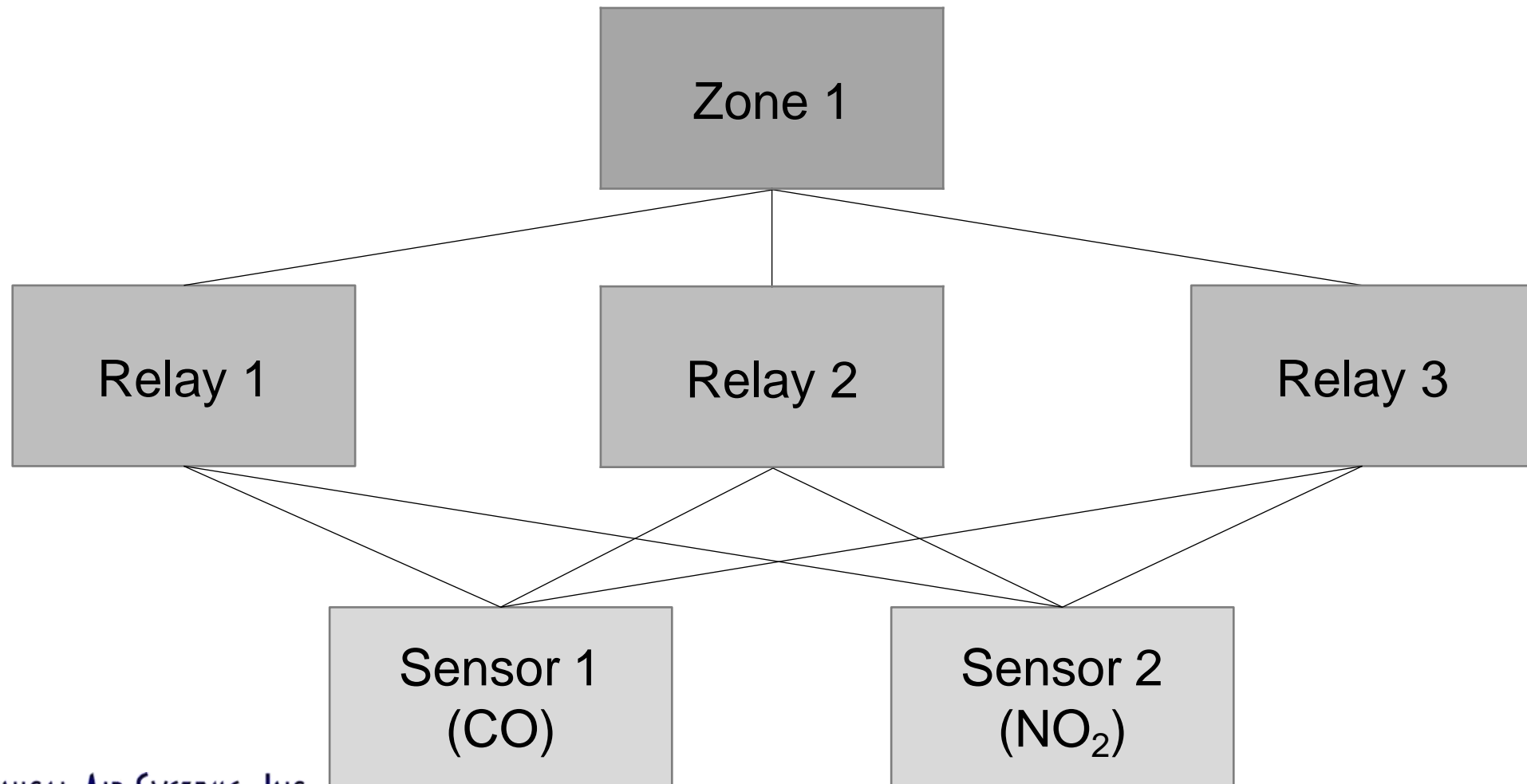
# Typical Applications

- Commercial Parking Garages
- Condominium and Apartment Garages
- Car and Bus Maintenance Garages
- Warehouses and Factories
- Auto Service and Repair Centers
- Delivery Docks
- Firehouses
- Car Dealerships
- Office Buildings
- Schools
- Postal Facilities
- Wastewater Treatment Plants

# Basics of Gas Detection



# System Configuration



# Standards



## Carbon Monoxide

PEL – TWA: 50 PPM

## Nitrogen Dioxide

PEL – STEL: 1 PPM

PEL – C: 5 PPM



## Carbon Monoxide

REL – TWA: 35 PPM

## Nitrogen Dioxide

REL – STEL: 1 PPM



## Carbon Monoxide

TLV – TWA: 25 PPM

TLV – STEL: 400 PPM

## Nitrogen Dioxide

TLV – TWA: 3 PPM

TLV – STEL: 5 PPM

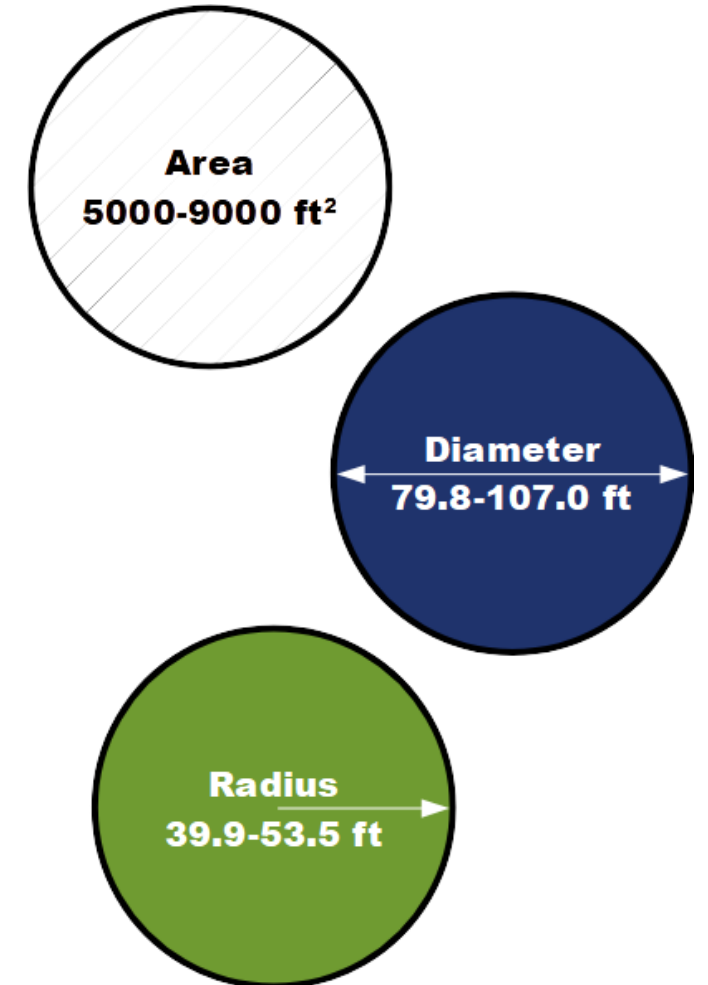
# Sequence of Operations

- Normal Operation
- Low Alert
- Medium Alert
- High Alert
- Alarm
- Delays
- Additional Outputs

CO (PPM)	NO <sub>2</sub> (PPM)
0	0
35	1.0
75	3.0
100	5.0
200	10.0

# Estimated Coverage

- Factors to Consider
  - Ceiling Height
  - Air Change Rate
  - Application
  - Obstructions
  - Interference





# Gas Detection Products

- GSE Generation 2
  - Standalone Detector
- GDCP-Touch
  - Multi-Zone Control Panel
- TRNS Generation 2
  - BMS Transmitter
- BGS
  - Carbon Dioxide
  - Oxygen



# Standalone Detectors

- Detects CO and NO<sub>2</sub>
- Monitors up to 4 Sensors and 36,000 sq. ft.
- User-Adjustable Setpoints, Delays, and Relays
- Built-in Manual Fan Activation
- Rainproof Water Resistance
- Simple Service and Maintenance
- Preconfigured Wiring
- Factory Calibration
- Customized Programming
- Works with New and Existing Building Controls Systems



# Control Panel

- Fully Configurable Zones, Relays, Setpoints, Delays, and Outputs
- On-Demand Ventilation Control by Gas Concentration, Timer, Schedule, or User Input
- 7" Full Color LCD Touch Screen
- Monitoring for up to 128 CO and/or NO<sub>2</sub> Sensors
- NEMA 4X Water and Dust Resistance
- BACnet IP and Modbus RTU Communication for BMS Interfacing
- Customized Factory Programming and Configuration for Every Job



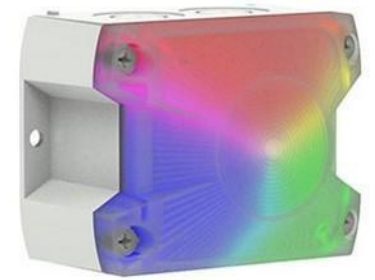
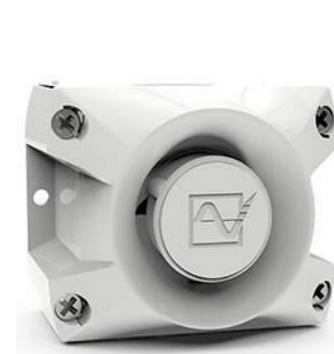
# Other Gases

- BGS-CD-STD
  - Carbon Dioxide Detector
- BGS-OX
  - Oxygen Depletion Detector



# Accessories

- Horn/Strobes
  - 76 cd Multicolor RGB LED
  - 100 dB @ 1 m
- GDCP-PowerPack
  - 120 VAC to 24 VAC Transformer
- GDCP-ExpansionPack
  - 4 Relays
  - 1 Analog Output
  - Signal Repeater



# Resources

- Brasch
  - [Website](#)
    - [Project Calculator](#)
    - [Education](#) White Papers & Videos
    - [Downloads](#)
  - Technical Air Systems, Inc.
    - [www.technicalair.com](http://www.technicalair.com)
    - [pscheele@technicalair.com](mailto:pscheele@technicalair.com)
    - [973-285-1861](tel:973-285-1861)
- ARCAT
  - [CSI Specification](#)
  - [Drawings and Diagrams](#)