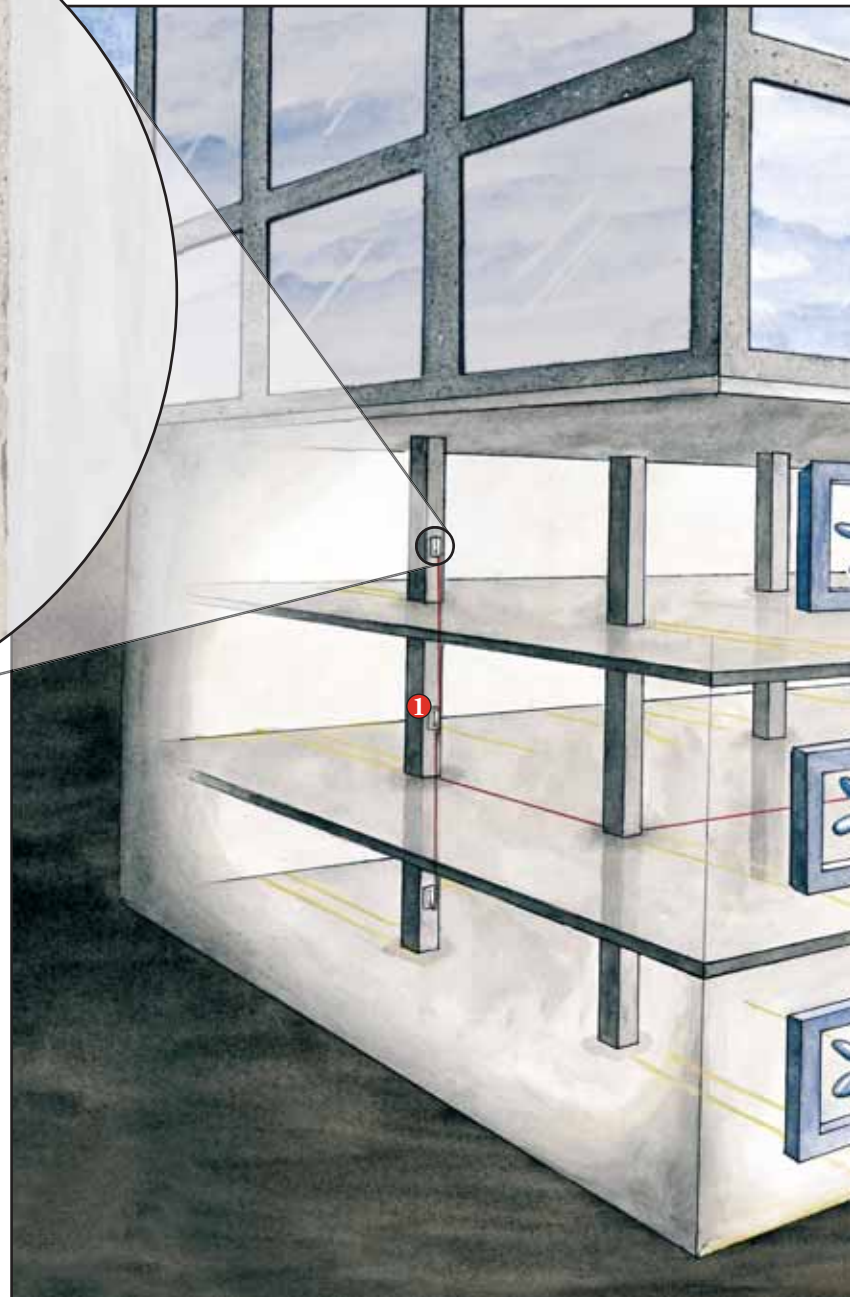


Zoning and Averaging

The VA301C controller offers unique zoning capabilities which permit the averaging and comparison of multiple transmitter readings. Zoning can reduce operational costs by ensuring that localized and/or brief fluctuations in gas concentrations, registered at a single transmitter, do not activate relays. For example, a single car idling in an enclosed structure may temporarily increase a reading at a nearby gas transmitter. Rather than activating fans as a result of this localized temporary fluctuation, zoning

limits relay activation until the *average reading* for a *group of sensor, or 'zone'*, exceeds the set-point. This type of averaged response reduces run-time of relays yielding savings in both energy use, as well as wear and tear on equipment such as fans.

The VA301C controller has the capacity to manage input from 96 transmitters which can be associated with up to 126 zones. Transmitters can belong to an unlimited number of zones, providing maximum operational and control flexibility.



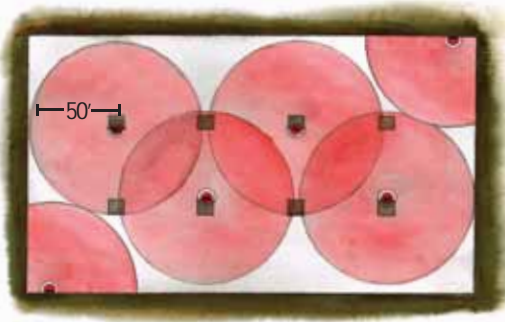
Decreased Installation Costs

By daisy-chaining gas transmitters to each other, instead of linking each transmitter directly to the controller, a Vulcain system greatly reduces the installation cost of wiring, conduit and labor. The modular nature of these installations allow for easy upgrade or retrofit to an existing system.

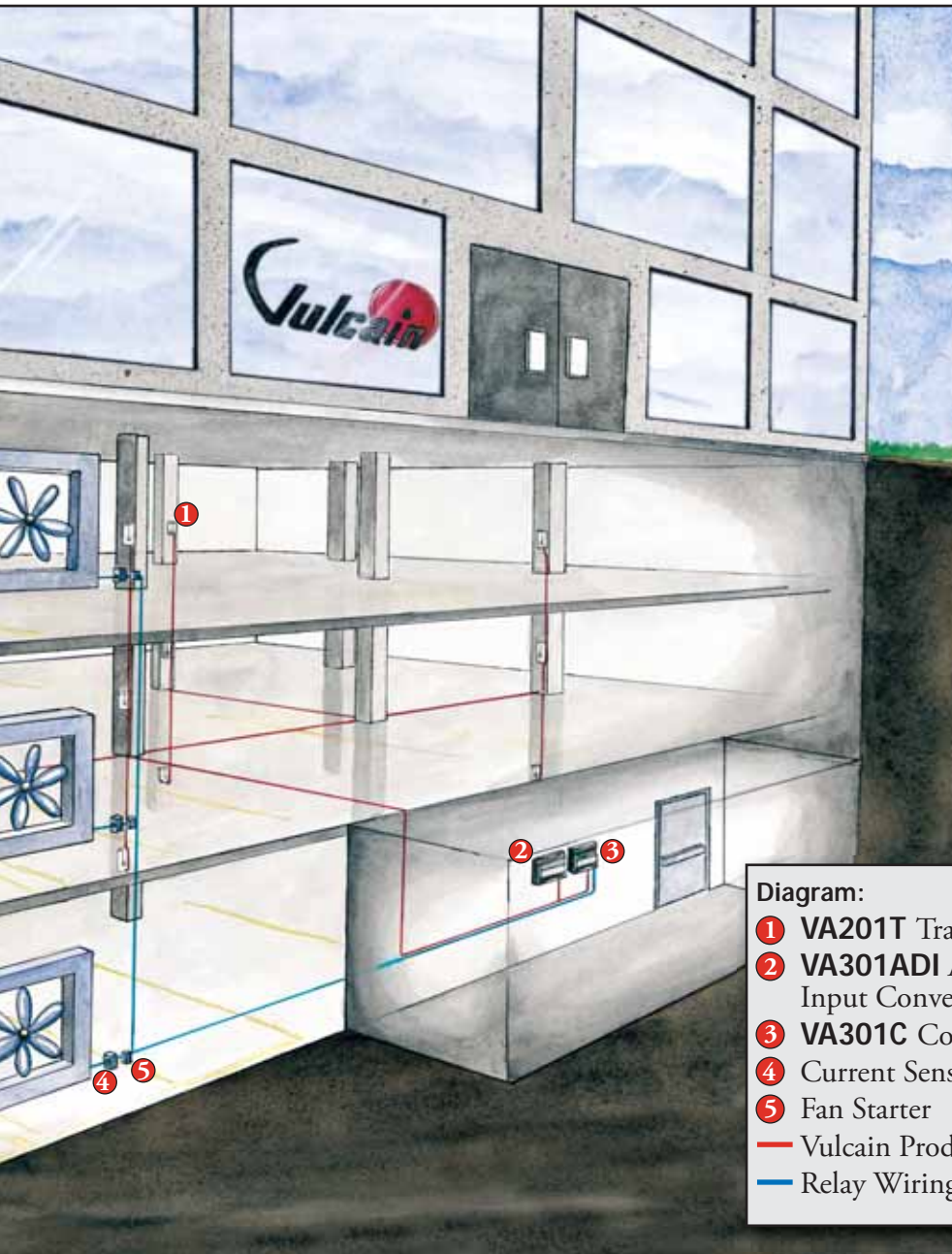
All systems are pre-programmed, addressed and come with a customized wiring diagram to facilitate simple, economical installation.

Sensor Placement Diagram

The VA201T toxic and combustible gas transmitter measures the concentration of harmful gases typically found in parking structures. In parking facilities carbon monoxide (CO) is the most commonly monitored gas. Since CO has a similar weight to air and naturally disperses throughout an area, the VA201T transmitter was designed to detect a target gas within a 50 ft. (15.25 m) radius from its location.



The diagram above is an overhead view of a 150 x 250 ft. (45.75 x 76 m) conceptual parking facility. The diagram depicts typical transmitter locations for optimal coverage and safety in a parking area.



Benefits of VA301ADI Start, Stop, Status

The economy of the VA301ADI analog/digital input converter enables even small scale ventilation systems closed-loop safety measures characteristically achieved with a more costly VAV box. The VA301ADI additionally verifies that the fan is truly working or stopping as directed, via a current sensor signal sent to the VA301C controller. This “status indication” assures that fresh air is entering only when intended and confirms that there is no unnecessary loss of heat due to non-functioning fans.

Diagram:

- ① VA201T Transmitter
- ② VA301ADI Analog / Digital Input Converter
- ③ VA301C Controller
- ④ Current Sensor
- ⑤ Fan Starter
- Vulcain Product Wiring
- Relay Wiring

VA301C

Digital Gas Detection Controller

Power Requirement:

17-27 Vac, 24-38 Vdc, 500 mA

Network Capacity:

3 Modbus channels for up to 96 sensors total
(32 per channel)

Communication Line Lengths:

Up to 2000 ft. / 609 m per channel
T-Tap: 65 ft. / 20 m, maximum per T-Tap
130 ft. / 40 m, maximum for all T-Tap combined

Relay Output Rating:

5 A, 30 Vdc or 250 Vac (resistive load)

Alarm Levels:

3 fully programmable levels per transmitter

Time Delays:

0, 30 sec., 45 sec.,
1-99 minutes before and/or after alarm

Outputs:

4 DPDT relays (alarms and/or fault);
65dBA buzzer

Display:

Large 122 x 32 dot matrix display

Operating Humidity Range:

0-95% RH, non-condensing

Operating Temperature Range:

-4 to 122°F / -20 to 50°C

Ratings and Certifications:

Certified to:  C22.2 No 205
Conforms to:  Standard 1244

IEC 61010-1 Including Amendments A1:1992 +
A2:1995 and National Deviations (Canada, US)

General Specifications

Size: 11.02 x 7.99 x 2.76 in. /
28 x 20.3 x 7 cm

Weight: 2.4 lb. / 1.1 kg

Enclosure: NEMA 4X Polycarbonate – ABS

VA301ADI

Analog / Digital Input Card

Power Requirement:

17-27 Vac, 15-26 Vdc @ 60 mA

Network Communication (Input/Output):

Inputs: 8 digital
16 4-20mA

Output: Modbus communication protocol

Operating Humidity Range:

0-95% RH, non-condensing

Operating Temperature Range:

-4 to 122°F / -20 to 50°C

Ratings and Certifications:

Certified to:  C22.2 No 205
Conforms to:  Standard 1244

General Specifications

Size: 11.02 x 7.99 x 2.76 in. /
28 x 20.3 x 7 cm

Weight: 2.4 lb. / 1.1 kg

Enclosure: NEMA 4X Polycarbonate – ABS

VA201T

Toxic and Combustible
Gas Transmitter

Power Requirement: 17-27 Vac, 24-38 Vdc,
250 mA

Sensing Technology:

Q1-type Sensor: Toxic: Electrochemical
Combustibles: Catalytic
combustion
Oxygen: Diffusion fuel cell
Q2-type Sensor: Solid-state
Electrochemical (CO)

Relay Output Rating:

5A, 30Vdc or 250 Vac (resistive load)

Visual Indicators:

Failure Indication: Yellow LED
(Available in network configuration only)
Normal Operation: Green LED

Audible Alarm:

65 dBA at 3 ft. / 1 m

Outputs:

RS-485 Modbus, 4-20mA, Alarm relay

Display:

10-step LED standard; LCD optional

Ratings and Certifications:

Certified to:  C22.2 No 205
Conforms to:  Standard 1244

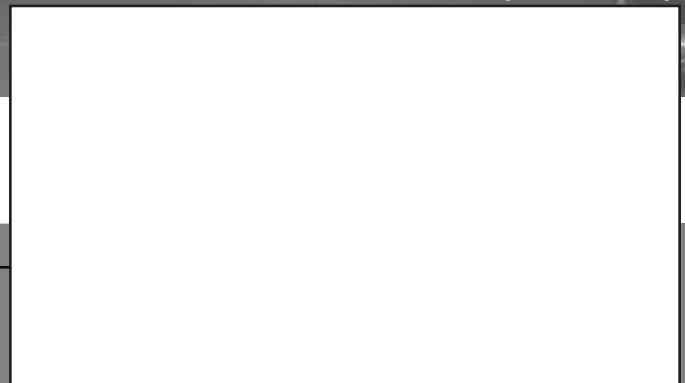
General Specifications

Size: 8.4 x 5.3 x 2.25 in. /
21.3 x 13.4 x 5.7 cm

Weight: 0.88 lb. / 0.4 kg



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