D381 Air Quality Detector (Macurco AQC-21)

The D381 Air Quality Detector (Macurco AQC-21) is a general purpose detector for the presence of gases such as diesel fumes, cigarette smoke, volatile organic gases, and hydrocarbon gases. Its primary use is to detect cigarette smoke in nonsmoking areas.

**Note** These detectors are not suitable as smoke alarms, fire alarms, or carbon monoxide detectors.

### Functions

#### Basic Operation

The air quality detector can control the power to a fan motor that is powered by 120 VAC and has a maximum horsepower rating of 0.25 (186.5 W).

#### Automatic Fan Control

The air quality detector can be connected to a normally-open (NO) initiating circuit on a Class A or Class B alarm control panel. The detector initiates relay closure upon alarm and the alarm panel can identify the location of the alarm.

#### Alarm Indication

There is one green and one red LED on the front of the detector. The green LED lights steadily when the detector is operating normally. It flashes during initial power up or when the detector has an internal sensor failure. The red LED also lights steadily when the detector operates normally. It flashes in alarm or when the detector has an internal sensor failure.

**Note** During an internal sensor failure the relay activates as if there were an alarm. The green LED flashes during an internal failure but not during an alarm.

### Status LEDs

1. 12 VDC or 24 VDC operation
2. Easy installation, mounts on a standard four-inch square back box
3. Adjustable settings for sensitivity and activation time
4. Status LED
5. Relay output can be used to switch a variety of devices
6. Supervised sensors indicate internal failure
7. Automatic reset after alarm or power outage

### Installation/Configuration Notes

#### Compatibility Information

The air quality detector is compatible with all UL Listed control panels that have 12 VDC to 24 VDC power and alarm initiating circuits.

#### Mounting Considerations

Mount the detector 4 ft to 5 ft (1.2 m to 1.5 m) above the floor on a standard 4-inch square back box. Space the detectors at 30 ft (9 m) separation. Place extra detectors in areas where people work or where the air is stagnant (for example, in corners).
### Wiring Considerations
Use the indicated wire size for the detector loop:

<table>
<thead>
<tr>
<th>Length of Wire Run</th>
<th>Recommended Wire Size</th>
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</thead>
<tbody>
<tr>
<td>200 ft (61 m) or less</td>
<td>22 AWG (0.8 mm)</td>
</tr>
<tr>
<td>Up to 575 ft (175 m)</td>
<td>20 AWG (1.0 mm)</td>
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<tr>
<td>Up to 686 ft (209 m)</td>
<td>18 AWG (1.2 mm)</td>
</tr>
<tr>
<td>Up to 1300 ft (396 m)</td>
<td>16 AWG (1.5 mm)</td>
</tr>
<tr>
<td>Up to 2100 ft (640 m)</td>
<td>14 AWG (1.8 mm)</td>
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<tr>
<td>Up to 3200 ft (975 m)</td>
<td>12 AWG (2.3 mm)</td>
</tr>
</tbody>
</table>

Terminate each loop with an end-of-line resistor as specified by the control panel’s installation instructions.

### Parts Included

<table>
<thead>
<tr>
<th>Quant.</th>
<th>Component</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Air quality detector</td>
</tr>
<tr>
<td>1</td>
<td>Literature pack</td>
</tr>
</tbody>
</table>

### Technical Specifications

#### Mechanical Properties
- **Color:** White
- **Dimensions (HxWxD):** 4.5 in. x 4.5 in. x 1.75 in. (11.4 cm x 11.4 cm x 4.4 cm)
- **Weight (shipping):** 1 lb (0.45 kg)

#### Outputs
- **Alarm**
  - Relay Number and Type: one Form C
  - Relay Rating: 5 A, 120 VAC, 0.25 HP (186.5 W)

#### Power Requirements
- **Voltage (input):** 12 VAC or 24 VAC or 12 VDC or 24 VDC

### Ordering Information

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Air quality detector