



Ax60+ Kiosk Option

Quick Start Guide



Safety information

Warnings are used in this Quick Start Guide to indicate potentially hazardous situations which could result in serious injury or death. Cautions are used to indicate potentially hazardous situations that could result in equipment damage or loss of data. Notes are used to provide information that is important but not hazard related.

- ⚠ WARNING: READ THE SAFETY INFORMATION IN THIS QUICK START GUIDE BEFORE INSTALLING OR USING THE Ax60K.**

- ⚠ WARNING: DO NOT TEST THE ALARM WHEN IT IS CLOSE TO THE EARS. IT HAS A HIGH VOLUME SOUNDER WITH A SOUND LEVEL OF 88 DECIBELS AT A DISTANCE OF 3 METRES.**

- ⚠ WARNING: DO NOT TEST THE ALARM WHEN IT IS CLOSE TO THE EYES. IT HAS A HIGH VISIBILITY STROBE LIGHT WITH A LUMINOUS INTENSITY OF 100 CANDELA.**

- ⚠ WARNING: ENSURE YOU PERFORM A RISK ASSESSMENT BEFORE INSTALLING THE CO₂ SENSOR AND ALARM. IDENTIFY POTENTIAL SOURCES OF CO₂ LEAKS AND AREAS OF HUMAN OCCUPATION. DO NOT USE A SINGLE Ax60K TO COVER MORE THAN 80M³. USE AN ADDITIONAL UNIT IF THE AREA HAS A COMPLEX SHAPE, PHYSICAL OBSTACLES, POOR VENTILATION OR ANY ZONES WHERE CO₂ MAY COLLECT.**

- ⚠ WARNING: INSTALL THE CO₂ SENSOR AT A HEIGHT OF 12–18" (305–457MM) ABOVE FLOOR LEVEL. THIS IS BECAUSE CO₂ IS HEAVIER THAN AIR AND MAY COLLECT AT A LOW LEVEL.**

- ⚠ WARNING: DO NOT OPEN THE Ax60K CO₂ SENSOR OR ALARM IF THEY ARE CONNECTED TO THE POWER SUPPLY. DISCONNECT AND ISOLATE THEM FROM LIVE HAZARDOUS VOLTAGE.**

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1 Introduction

This Quick Start Guide explains how to install and use the Ax60K. For more information on operation and maintenance, refer to the *Ax60 User Manual P0159-800*. For more information on servicing and calibration, refer to the *Ax60 Service Manual P0159-803*. These documents are available to download from <http://www.analox.net/>

1.1 Purpose of the Ax60K

The Ax60K is a life-safety device that measures the amount of carbon dioxide (CO₂) in the air. It is designed for street kiosks and small restaurants which use pressurised CO₂ to dispense carbonated drinks. The Ax60K has a built-in gas detector that continuously monitors the atmosphere and triggers an alarm if it detects a high level of CO₂. Alarms are displayed by an indicator lamp, a buzzer, a strobe light and a high-volume sounder.

Alarm

The Alarm has a high-visibility flashing strobe light and a high volume sounder. These give visible and audible warnings of increased levels of carbon dioxide detected by the CO₂ Sensor. The warnings vary, depending on the amount of CO₂ detected. The power supply to the Alarm is provided by the CO₂ Sensor.

CO₂ Sensor

The CO₂ Sensor constantly monitors the air and detects increases in the level of carbon dioxide.

If the CO₂ Sensor detects a level of CO₂ above set limits it sends a signal to the Alarm. The CO₂ Sensor supplies power to the Alarm.

Power supply unit

The power supply unit (PSU) supplies 24V DC power to the CO₂ Sensor.

Cables and coupler

The CO₂ Sensor and Alarm are pre-wired with 2-metre connecting cables. A cable coupler is supplied to allow the cables to be connected.



1.2 The dangers of CO₂

Fresh air contains a safe level of CO₂, 0.04% or 400ppm (parts per million). An increase to 1.5% (15,000ppm) causes drowsiness, headache and increased breathing. A level of 3% (30,000ppm) causes dizziness. 10% (100,000ppm) will cause unconsciousness and eventually death. CO₂ is odourless and colourless and is not detected by human senses. There is a danger to health wherever pressurised or concentrated CO₂ is stored or used.

1.3 Ax60K alarm settings

The Ax60K has three alarm settings which are factory set:

- Time-weighted average (TWA) alarm. This is triggered by a CO₂ level of 5000 ppm (0.5%) detected over the previous 8 hours. A TWA alarm is announced on the CO₂ Sensor only (flashing red indicator LED and internal buzzer).
- Low alarm. This is triggered by 15,000ppm (1.5%) CO₂. A low alarm is announced by both the CO₂ Sensor (flashing red indicator LED and internal buzzer) and the Alarm (high-visibility strobe).
- High alarm. This is triggered by 30,000ppm (3%) CO₂. A high alarm is announced by the CO₂ Sensor (flashing red indicator LED and internal buzzer) and the Alarm (strobe light and sounder).

1.4 Package contents

The standard Ax60K package contents are listed below. Additional CO₂ Alarms may be purchased to enable the system to be extended (up to a maximum of four Alarms).

Ax60K Carbon Dioxide Detector package contents (supplied)	1 x CO ₂ Sensor, including: <ul style="list-style-type: none"> • 1 x 2m factory fitted Quick Connect (QC) cable with blue RJ45 connector • 1 x 1m factory fitted power cable to power supply unit (PSU) 1 x Alarm (additional Alarms can be ordered) including: <ul style="list-style-type: none"> • 1 x 2m factory fitted QC cable with blue RJ45 connector 1 x mains power supply unit (PSU) (plug-in type complete with interchangeable heads to suit the destination country) 1 x PSU securing strip 1 x RJ45 coupler for connecting the cables 1 x hazard labels, information labels, template and Quick Start Guide
Consumables (supplied)	Wall plugs and screws (fixing kits) for mounting the CO ₂ Sensor, Alarm and PSU securing strip to the wall
Tools required (NOT SUPPLIED)	PZ1 Pozi screwdriver to suit wall screws Drill and drill bits for wall plugs Spirit level, tape measure, ruler

2 Description

2.1 Overview

There are three main components in the Ax60K—the CO₂ Sensor, CO₂ Alarm and PSU. These are pre-wired to enable an easy installation. The components are shown below.



CO₂ Sensor, pre-wired cables and PSU



CO₂ Alarm, pre-wired cable and coupler

2.2 Features



❶ Power indicator (green LED)

If the Power indicator flashes once per second:

- CO₂ Sensor is receiving power and operating correctly.

If the Power indicator is off:

- CO₂ Sensor is not receiving power, **or** the CO₂ Sensor has a fault.

If the Power indicator is continuously on:

- CO₂ Sensor has a fault.

❷ Alarm indicator (red LED)

The Alarm indicator has three flash patterns, one for each type of alarm:

- ¼ second on, 1¾ seconds off = TWA alarm (0.5% CO₂ average over 8 hours).
- 1 second on, 1 second off = 1.5% CO₂.
- ⅛ second on, ⅛ second off = 3% CO₂.

If the Alarm indicator is continuously on:

- The alarm is acknowledged; the alarm will clear when the CO₂ level reduces.

❸ Accept/Test button

To use the Accept/Test button, press it firmly and hold it down for a couple of seconds. When you release the button, the buzzer will sound once.

❹ Internal buzzer

The internal buzzer sounds briefly when you press Accept/Test, continuously for 5 seconds when the Ax60K powers up, once per second to show a fault, and in parallel with the alarms.

❺ Sensor opening

The sensor opening allows air to flow across the carbon dioxide detector. The sensor opening must be kept clean and free from obstructions.



❶ Power indicator (green LED)

If the Power indicator is on (not flashing):

- CO₂ Alarm is receiving power.

NOTE: The CO₂ Alarm receives its power from the CO₂ Sensor.

If the Power indicator is off:

- CO₂ Alarm is not receiving power, **or**
- CO₂ Alarm has a fault.

NOTE: If the CO₂ Sensor has a fault the CO₂ Alarm Fault LED will flash.

❷ Fault indicator (yellow LED)

If the Fault indicator is off:

- CO₂ Sensor is functioning correctly.

If the Fault indicator flashes once per second:

- CO₂ Sensor has a fault.

NOTE: The Fault indicator LED does not mean there is a fault on the CO₂ Alarm, it means there is a fault on the CO₂ Sensor.

❸ Strobe light

The strobe light is a very bright, visible alarm.

NOTE: The strobe window can be supplied in white, blue or red.

The strobe light has two flash patterns:

- 1 second on, 1 second off = 1.5% CO₂.
- ½ second on, ½ second off = 3% CO₂.

❹ Sounder

The sounder is a high-volume, audible alarm. If the sounder is ½ second on, ½ second off:

- The CO₂ Sensor has triggered a high alarm (3% CO₂).

3 Installation

3.1 CO₂ Sensor

Retain the clear protective film on the fascia until the installation is complete. Using the supplied paper template mark out the wall-fixing position for the CO₂ Sensor ensuring it is level. Drill holes in wall, install plugs/dowels then fix the CO₂ Sensor in position.

⚠ WARNING: CARBON DIOXIDE GAS (CO₂) IS HEAVIER THAN AIR AND SHOULD BE MONITORED FROM A LOW HEIGHT. YOU SHOULD THEREFORE INSTALL THE CO₂ SENSOR AT A HEIGHT OF 12–18" (305–457MM) ABOVE THE FLOOR LEVEL.



3.2 Alarm

⚠ WARNING: SOME KIOSKS AND FOOD COURT RESTAURANTS MAY BE EXPOSED TO HIGH-VOLUME BACKGROUND NOISE. INSTALL THE ALARM SO THAT IT IS AUDIBLE & VISIBLE FROM ALL ACCESS AND EGRESS POINTS AND BUSY AREAS.

Retain the clear protective film on the fascia until the installation is complete. Using the supplied paper template mark out the wall-fixing position for the Alarm ensuring it is level. Drill holes in wall, install plugs/dowels then fix the Alarm in position.



3.3 Cables

Route the pre-wired cables from the CO₂ Sensor and Alarm securely along the wall. Fit the cable coupler then connect the cables together. Then route the pre-wired cable from the PSU securely along the wall.



3.4 Power supply

Fit the appropriate interchangeable plug head for your power socket. Ensure the power supply is off. Insert the plug into the power socket.

Mark out the wall-fixing position for the PSU securing strip. Drill holes in the wall and install wall plugs/dowels. Fix the securing strip firmly over the PSU.



3.5 Hazard warning/information labels

 **NOTE:** SIGNAGE PACKS CAN BE PURCHASED FROM ANALOX, CONTACT ANALOX FOR MORE DETAILS, ALTERNATIVELY THEY CAN BE DOWNLOADED FROM [HTTPS://WWW.ANALOXSENORTECHNOLOGY.COM/](https://www.analoxsensortechnology.com/)

Install the hazard warning/information labels and ensure they are visible to employees.

4 Operation

4.1 Power on

To power on the Ax60K, follow this procedure.

- [1] **Ensure the components are installed as described in section 3 Installation.**
- [2] **Switch on the mains power supply at the wall socket.**

The Ax60K powers on and runs a 5-second self-test, during which:

- **The Alarm indicators illuminate**
- **The CO₂ Sensor indicators illuminate**
- **The CO₂ Sensor internal buzzer sounds**

Following a successful power-on, the CO₂ Sensor begins continuously monitoring the air for CO₂. During normal operation the status of the system is indicated as shown below:

Normal operation with CO₂ at a safe level	CO₂ Sensor indication:	Power indicator flashes once per second. Alarm indicator is off. Buzzer is off.
	Alarm indication:	Power indicator is on. Fault indicator is off. Strobe light is off. Sounder is off.

5 Alarms

⚠ WARNING: IF THE Ax60K DISPLAYS AN ALARM, YOU MUST FOLLOW THE SAFETY PROCEDURES SPECIFIED BY THE HAZARD WARNING AND INFORMATION LABELS.

Alarms are indicated as follows:

TWA alarm (0.5% average over the previous 8 hours)	CO₂ Sensor indication:	Power indicator flashes once per second. Alarm indicator flashes ¼ second on, 1¾ seconds off. Buzzer sounds in parallel.
	Alarm indication:	Power indicator is on. Fault indicator is off. Strobe light is off. Sounder is off.
Low alarm (1.5%)	CO₂ Sensor indication:	Power indicator flashes once per second. Alarm indicator flashes 1 second on, 1 second off. Buzzer sounds in parallel.
	Alarm indication:	Power indicator is on. Fault indicator is off. Strobe light flashes 1 second on, 1 second off. Sounder is off.
High alarm (3%)	CO₂ Sensor indication:	Power indicator flashes once per second. Alarm indicator flashes ⅛ second on, ⅛ second off. Buzzer sounds in parallel.
	Alarm indication:	Power indicator is on. Fault indicator is off. Strobe light and sounder are ½ second on, ½ second off.

5.1 Acknowledging/clearing

⚠ CAUTION: THE SENSOR RETAINS ITS CURRENT ALARM STATE, EVEN AFTER A POWER OUTAGE. IF AN ALARM IS NOT ACKNOWLEDGED AND THE Ax60K IS POWERED OFF, IT GOES STRAIGHT BACK INTO ALARM WHEN POWERED ON.

To acknowledge/clear an alarm, follow this procedure:

- [1] **Press and hold Accept/Test until the buzzer sounds. The alarm is now muted.**
👉 **NOTE: THE ALARM IS NOW ACKNOWLEDGED. IT WILL AUTOMATICALLY CLEAR WHEN THE CO₂ LEVEL REDUCES BELOW THE ALARM THRESHOLD.**

6 Maintenance

6.1 Alarm test

An alarm test can be performed to ensure the Ax60K is operating. Use this procedure:

- [1] **Press and hold down the Accept/Test button for 5–10 seconds.**
The Ax60K runs a 5-second alarm test, during which:
- **The Alarm indicators illuminate**
 - **The Alarm strobe light illuminates**
 - **The Alarm sounder operates**
 - **The CO₂ Sensor indicators illuminate**
 - **The CO₂ Sensor internal buzzer operates**
- [2] **Either press and hold down Accept/Test to stop the alarm test or wait 5 seconds for the alarm test to stop automatically.**

6.2 Faults

Faults are announced by the Fault indicator on the Alarm. During normal operation the Fault indicator is off. If the Fault indicator flashes once per second, this means that the CO₂ Sensor has a fault. Power off the CO₂ Sensor unit and call a service engineer.

6.3 Calibration

The Ax60K CO₂ Sensor is factory calibrated and does not require periodic calibration adjustment. However, it is possible for an authorised service engineer to adjust the sensor calibration should this be required. For more information refer to the *Ax60 Service Manual P0159-803*.

6.4 Cleaning

Analox recommends periodic cleaning of Ax60K enclosures with a slightly damp cloth.

◆ **CAUTION: THE CO₂ SENSOR UNIT MUST BE PROTECTED FROM INGRESS OF WATER.**

6.5 Protection kit

CO₂ Sensors should be mounted at low level and are therefore vulnerable to accidental damage. To protect the CO₂ Sensor, Analox recommends fitting a Sensor Protection Kit, part number P0159-4305K, shown below (not to scale). The splashguard is fitted on the outside of the sensor opening. The sensor protector is wall mounted using the fixing kit.



Optional Ax60K Sensor Protection Kit. Available from Analox: part number P0159-4305K