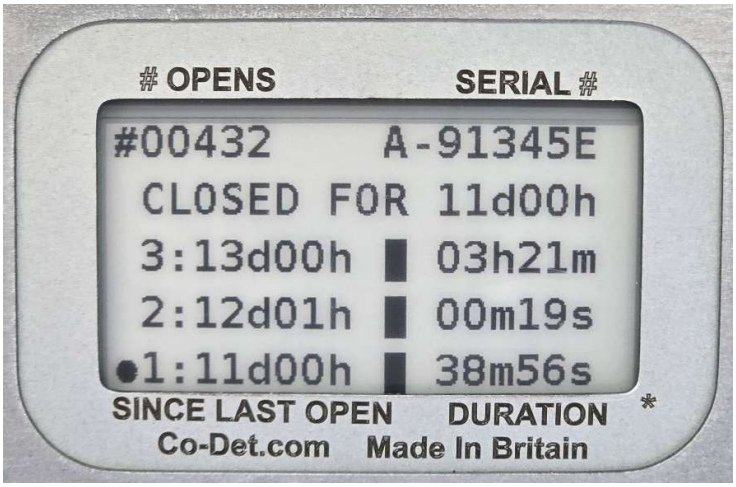
DANTECH
ELECTRONIC ENGINEERING

# Co-Det

## Container Open Display




## Purpose

The purpose of Co-Det is to monitor the opening of containers and display a record of recent openings and open durations.

This record can be viewed each time the container is opened, confirming to authorised users the most recent opening events as well as the total number of times that the container has been opened, alerting them to unexpected or suspicious activity so that appropriate action can be taken.

By fitting this device to all containers an additional strong deterrent against unauthorised access to containers is created, adding an additional layer of security.

## Before first use

A Co-Det installation form is provided, detailing information relating to your Co-Det device including serial number, time and date of installation and number of openings recorded at that time. This can be used to confirm that the container has not been tampered with since installation.

## Overview

Co-Det consists of a user display encapsulated into a metal casing, with sensors monitoring the open or closed state of the container and the lock.

When the container is both closed and locked, the device registers the CLOSED state.

When the container is unlocked and/or opened, the device registers the OPEN state and updates the log.

While the container is open the device will display the length of time the container has been closed for and the three last opening events and their durations.

The times shown on the display are a snapshot taken at the time that the container is opened. They do not change while the container is open.

The device also displays the total number of openings recorded since installation.

There is a log of the last 20 events that can be accessed on demand.

If tampering of the container monitoring sensors is detected, an opening is recorded in the log with a 'T' suffix.

Tampering with the device internal circuitry results in an unrecoverable fault, made visible on the display. The device ceases to function and will require replacement.

Each device has a unique serial number shown on the display (>16 million differs per production year), allowing identification and association with a container and also preventing device substitution by unauthorised users.

Installation and future replacement is to be carried out by an approved installer only. The device is battery powered, with a 'sealed for life' non-replaceable battery and so is completely stand-alone in operation, with no need for external wiring or interface with any other system.

The recommended replacement interval for the device is every five years, allowing reliable battery life and increased security afforded by periodic design upgrades. The device has a predicted capability of over 50,000 container opening registers within this time.

Indication is given on the display when the product is nearing end of life, either as a result of age, battery voltage or number of openings.

At end of life the device is replaced by an authorised installer and the old device discarded according to approved procedure.

## Reading the Display

While open the display shows:




**FIG A**

1. # OPENS - The number of openings since installation. Top left on display.
2. SERIAL # - The device unique serial number. Top right on display.
3. CLOSED FOR - The duration of time since the between last close and open (dddd,hh,mm,ss).
4. SINCE LAST OPEN - The time since last opening event (dddd,hh,mm,ss). Left column on display shows last three events.
5. DURATION - Duration of last open event (dddd,hh,mm,ss). Right column on display shows last three events.
6. * - Star marked on casing lower right corner indicates location to present supervisor magnet.

**Opening the container**
When the container is unlocked OR opened, the display updates to show the last closed duration and the list of the three most recent events. The total number of openings since installation and device serial number are displayed.

**Closing the container**
When the container is closed AND locked, the device displays 'Closed' and awaits the next opening event. The total number of openings since installation and device serial number continue to be displayed.

**Activity Marker**
Within approximately 35 seconds of opening, an activity marker moves on the screen to give confirmation that the device is functioning.

**Extended Event Log**
During this time that the activity marker is moving after opening the container, you may access the extended log of the most recent 20 events, by holding the supervisor magnet to the lower right corner of the display (marked '*' on case).
Once this function is triggered the display will cycle through the extended event list. The most recent switch Tamper event, if applicable, will be shown at the end. Function will then revert to the normal 'Open' display.

**Sensor Check / Anti Mask indication**
A marker dot appears to the left of numbers 1 and 2 at the lower left of the display to indicate the closed state of the door sensor and lock sensor.
With the container open and unlocked, neither mark should be present.
Seeing the marker dot to the left of 1 or 2 while the container is open and unlocked is not normal and may indicate suspicious activity. Report this according to your site procedure.
If necessary, the sensors can be tested for correct function to confirm that the marker dots appear when the switch / sensors detect closure or lock actuation. N.B. when both sensor types are actuated at the same time and the device is working correctly, the device will register 'Closed'.

**Example**
Looking at the picture of the display **FIG A** we can see:

- the display is in the OPEN mode,
- The device serial number is A-91345E
- The total number of times that the container has been opened is 432.
- The container has been closed for 11 Days and 0 hours at time of opening.
- The last time that the container was opened was 11 days 0 hours ago. (This is shown in the left hand column on the lower line next to the number 1.)
- The duration of the last container opening was 38 minutes 56 seconds. (This is shown in the right hand column on the lower line.)
- The previous time that the container was opened (last but one time or two openings ago for line number 2) was 12 days and 1 hour ago.
- The duration that the container was open was 19 seconds.
- Prior to this, the previous time that the container was opened (three openings ago for line number 3) was 13 days 0 hours ago, for 3 hours 21 minutes.
- Dot marker next to number 1 shows that lock sensor or door sensor is currently closed.

## Notes for use

Once installed, the Co-Det device functions automatically recording opening events in the log while the container is used. Use the container as you normally would, remembering to close, lock and check every time.

When you open the container, check within 30 seconds that the activity marker on the display is moving, indicating that the device is working.
Observe the record on the display. Make any notes that are necessary for your procedures.

For example you could check:

- the unique serial number for your container,
- the total number of container openings,
- the time since the last container was open,
- is there a tamper event recorded?
- are marker dots displayed to the left of either 1 or 2 signifying an issue?

Are all of these as expected..?
Remember, the times shown on the display are a snapshot taken at the time that the container is opened. They do not change while the container is open.