



CALIBRATION KITS



Non-contractual photo.

INTRODUCTION

Cylinders loaded with a non-reactive mixture for calibrating stationary gas detectors designed to detect HCFC/HFC, NH₃ and CO₂.

In accordance with EC regulation no. 842/2006 F-Gas and the French decree of 7 May 2007, installed gas detectors for halogenated fluids such as HCFC/HFC must be checked at least once every 12 months.

The **calibration kit** is used for on-site sensitivity inspections of the installed detectors, and to recalibrate the system where needed.

It is composed of a cylinder loaded with 110 litres of a selected non-reactive mixture with a concentration of 100 or 1000 ppm for HCFC/HFC kits (to be defined for NH₃ or CO₂ kits), a flow controller and a non-absorbent tube with a calibration extraction hood.

PROPERTIES

- Cylinder volume of 1.55 dm³ loaded with 110 litres of non-reactive mixture
 - concentration of 100 or 1000 ppm of detecting fluid (Fluid to be specified: R-22, R-134a, R404A, R-410A, R407C, R-507, etc.)
 - concentration to be specified for NH₃ and CO₂ upon order placement
- Box flow: 0.3 litre/min.
- Detection operating time per sensor: ≈ 10 minutes, so a detection capacity of approximately 30 sensors per cylinder.

| Ref. | Items | Comments |
|------|-------------------------------|--|
| 7597 | CAN110 - 100 ppm | Specify the fluid when placing the order |
| 7598 | CAN110 - 1000 ppm | Specify the fluid when placing the order |
| 7861 | CAN 110 – for CO ₂ | Specify the concentration when placing the order |
| 7862 | CAN 110 – for NH ₃ | Specify the concentration when placing the order |

Order no.1 of 7 May 2007 of French decree 2007-737 stipulates an annual sensitivity inspection of gas detectors designed to detect halogenated fluids such as HCFC/HFC at least once a year, in order to check that this does not deviate by more than 10%.



CALIBRATION KITS

Calibration kits are used to check the gas detectors are functioning correctly, and to adjust the alarm thresholds if necessary, when exposed to a pre-set concentration of the detecting fluid. They validate the functioning and sensitivity of the sensor and control box at these concentrations.

Procedure for on-site sensitivity inspections - Equipment in service, detection of halogenated fluids

Before commencing with the inspection, you must ensure that all occupants, operators and/or supervisors have been informed.

- 1) The equipment must have been switched on for at least the past 24 hours.
- 2) Choose the calibration kits for the concentration and fluid that match the facility:
 - 100 ppm for single-level gas detectors
 - 100 and 1000 ppm for two-level gas detectors
- 3) Expose the sensor to the calibration fluid in accordance with the inspection procedure supplied with the kit.

For comfort, you have the option to deactivate the sound alarm during testing, by removing the JP1 jumper for single-level models or with a key switch for the two-level models. You will use the visual alarm during the inspection.

- 4) Scenario 1 - Expose the sensor to the gas contained in the calibration kit. The alarm triggers.
 - a. The equipment is operational. In this case, check that the alarm threshold voltages measured with a voltmeter correspond to the values given on the sensor case.
If the voltage measured does correspond to the value given, the sensitivity has not deviated. If the voltage measured is different, the sensor's sensitivity has deviated and the sensor must be replaced with a new one. After changing the sensor for a new one, the voltage must be checked again and, if necessary, adjustments made in accordance with the inspection and calibration procedure provided with the calibration kits.
- 5) Scenario 2 - Expose the sensor to the gas contained in the calibration kit. The alarm does not trigger.
 - a. Check the alarm threshold voltage with a voltmeter. If this differs from the value given on the sensor case, replace the sensor with a new one. Check the voltage reading again. If it is identical to the value given on the sensor case, expose the sensor to the calibration gas in the calibration kit.
 - b. If the alarm triggers, the sensitivity has not deviated and the equipment is operational.
 - c. If the alarm does not trigger, the equipment is faulty.

Remember to re-activate the sound alarm before restarting the equipment if you had deactivated it for the test.

- 6) Note the information and inspection results in your maintenance file, recording the identifiers of the gas detectors and sensors, the calibration kit, the voltage values and the results of the inspection with sensor changes where that had been necessary.
- 7) Keep this sheet and provide a copy to the facility operator.
- 8) Conduct this inspection at least once every 12 months.

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