

## USER MANUAL

# DF 110

## Detector of refrigerant gases and hydrogen (H<sub>2</sub>)

### Description of the device

1. Batteries led
2. Autozero led
3. Activation/deactivation key for the audible signal
4. Leds of graphic visualisation of thresholds
5. On/Off key
6. Sensitivity/Manual autozero key



### General features

HFC: R134a, R404a, R407c, R410a, R32, R422a/b/c/d, R425a, R507a, R125  
 HCFC: R22  
 CFC: R12, R502  
 Others: H<sub>2</sub>, R290, R600a, HFO-1234yf, HFO-1234ze

Detected gases	
Measuring element	Semi-conductor sensor
Display	13 LEDs: 8 for the graphic visualization of thresholds, 3 for the sensitivity of detection, 2 for the battery level and manual autozero
Indication	LED: gradual lighting up when the gas concentration increases Audible: the beep frequency increases when the gas concentration increases
Probe	Flexible, 300 mm length
Autonomy	> 12 hours
Housing	Anti-choc ABS, protection IP54
Keypad	3 keys
European directives	2014/30/EU EMC; 2014/35/EU Low Voltage; 2011/65/EU RoHS II; 2012/19/EU WEEE
Power supply	4 AAA LR03 1.5 V batteries
Ambiance	Neutral gas
Conditions of use (°C, %RH, m)	From 0 to +50 °C. In non condensing conditions. From 0 to 2000 m.
Storage temperature	From -20 to +80 °C
Auto-extinction	15 minutes
Weight	295 g

### Technical specifications

Mode	Indicative measuring range (g/year)	Visual alarm
Low sensitivity ("B" on the device)	From 0 to 300 g/year	All the LEDs (8) for 300 g/year
Normal sensitivity ("Norm" on the device)	From 0 to 30 g/year	All the LEDs (8) for 30 g/year
High sensitivity ("H" on the device)	From 0 to 3 g/year	All the LEDs (8) for 3 g/year

## Perform a measurement

- Turn on the detector pressing the "On/Off" key.  
When it turns on, the pre-heating phase of the sensor begins. This phase lasts 60 seconds. During this phase, all the visualisation leds of thresholds light one after the other. A few second before the end of the pre-heating phase, all the leds blinks at the same time.  
Before using the device, make sure with the tester that the device works correctly (see next page).
- Place the probe as close as possible to the site of the suspected leak.
- Slowly move the probe (approximately 2 cm/second) in the direction to the possible source of the leak.  
**It is important to move the probe past the leak and to go back toward it. The device responds to changes in gas concentration in the air. Moving the probe allows to the device to respond properly to these changes. If gas is detected, the frequency of the beep repetition will increase as the detected gas concentration increases and the leds of graphic visualisation lights from the left (low gas concentration) to the right (high gas concentration).**

### Manual and automatic autozero functioning

The detector performs an automatic autozero every 2 s to set its minimum threshold of detection. This autozero allows to guarantee an optimum gas detection whatever the conditions of use (contaminated environment, temperature variations,...). In case of detection, according to the amplitude of gas measurement, the automatic autozero will deactivate to guarantee a better location of the leak. It will automatically reactivate after a return to normal conditions. In case of high gas concentration with a wide contaminated area, the automatic autozero can be not enough to detect precisely the location of the leak, there will be a measurement saturation. In this case, it is possible to perform a manual autozero into the contaminated area to reset the detection and to get back to a progressive sensitivity when getting close to the leak source.

To perform a manual autozero, please see next page.

### Setting of the sensitivity

If the gas concentration is high, press "Sens" key to set the sensitivity and like this to get a better identification of the leak source. Please see next page for the details about the three different sensitivities.

## Adjust the device


### Adjust the sensitivity

- Press the "Sensitivity/Autozero" key to adjust the sensitivity of the device.

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### Activate/deactivate the audible signal

By default, when starting the device, the audible signal is always active.  
The device is turned on.

- Press  key to activate the audible signal.
- Press this same key to deactivate it.

### Perform an autozero

The device is turned on.

- Press at least 3 s the  key to perform an autozero.  
The "Autozero" led turns on.

## Perform a test

The DF 110 is supplied with a tester which allows to make sure that the detector works correctly.

To test:

- Remove the tester cap by pulling on it.
- Turn on the detector and wait the end of the pre-heating phase (60 seconds).
- Put the detection probe a few centimetres above the tester. The beep frequency increases and the leds of graphic visualisation must react and lights from the left to the right. This indicates that the sensor and the electronic of the detector work correctly.



**After each test, remember to put the protective cap back on the tester.  
Replace the tester when its green colour is no longer visible.**

## Change the filter

- Unscrew the probe tip.
- Remove the filter located inside.
- Put a new filter.
- Screw the tip on the probe.

## Change the batteries

- Remove the front part at the back of the device.
- Change the old batteries by AAA LR03 1.5V batteries.
- Replace the front part.

