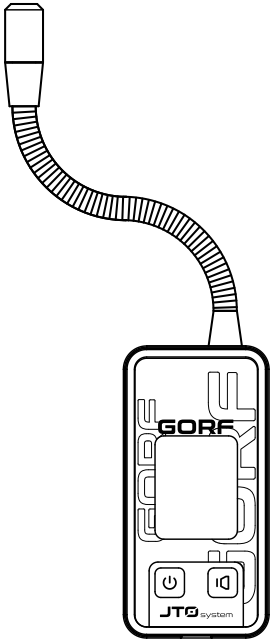
Portable Refrigerant Leak Detector GORF

Technical Conditions and User Manual

- Portable electronic device for refrigerant leak detection
- Responds to refrigerants such as R134A, R32, R1234ze, etc.
- Leak detection from 4 g/year
- Information on current gas concentration
- Bar indicator for easy leak location
- Flexible neck with a length of 15 cm allowing access to hard-to-reach areas
- Built-in batteries with long life
- Charging via USB-C
- Audible indication of exceeding the adjustable threshold



The GORF detector is a device designed for detecting refrigerant leaks from closed systems. Its main advantages are ease of operation, simple use, small dimensions, and good mechanical durability.

The device is equipped with a backlit display that shows the current concentration of detected gas and a bar indicator that reacts to concentration changes, allowing for easy identification of the leak location. The battery status is also indicated. A semiconductor sensor is used as the detection element, which responds to a wide range of substances. The device is factory-calibrated for refrigerant R134A, but recalibration for refrigerant R32 can be activated. Other refrigerants can also be detected, but the displayed gas concentration in the air may vary. The device allows setting a threshold level, whose exceedance is indicated by continuous beeping.

The GORF detector has a built-in battery for powering the device. Charging is performed using a standard adapter with a USB-C connector.

Device Parameters

Mechanical dimensions:	Body: $50 \times 100 \times 21$ mm, flexible neck with sensor: 150 mm
Weight:	155 g
Detected gas:	Refrigerants such as R134A, R32, etc.
Min. detectable leak:	from 4 g/year
Accuracy:	$\pm$ 100 ppm $\pm$ 20% of the reading
Warm-up time:	$<$ 90 sec
Response time:	$<$ 5 sec
Recovery time:	up to 1 minute
Operating time with fully charged batteries:	approx. 5 hours
Charging time:	approx. 4 hours
Charging adapter voltage:	5 V / 0.5 A
Operating environment:	Normal, non-explosive, AB4, humidity: 20 to 90% RH
Storage environment:	10 to 30 °C, 20 to 80% RH
Max. storage duration:	1 year
Designed according to:	Selected articles of ČSN EN 14 624

Usage Limitations

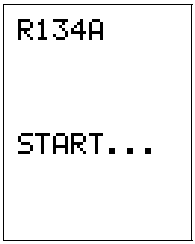
The GORF detector is intended for detecting refrigerant leaks in a standard atmosphere. Detection is not guaranteed in environments with low or high oxygen concentration. In environments where special chemicals may be present, the sensor may experience *poisoning* or measurement interference. The possibility of using the device in such environments must be consulted with the manufacturer.

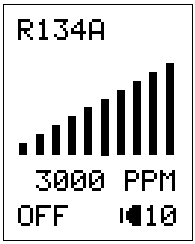
The GORF device is not intended for use in areas classified as ZONE 0, ZONE 1, or ZONE 2. It must not be used in environments with high humidity, and ingress of water droplets or other chemicals into the gas sensor must be prevented. The device is designed for normal, non-aggressive environments.

Device Operation Procedure

Turning the device on and off

The GORF device is turned on by pressing the button ⏻ located below the display. Upon startup, the display shows information about the device type and firmware version, accompanied by two beeps. To confirm startup, press the button ID under the `START` label.





Leak Detection

In refrigeration engine rooms, a certain background concentration of refrigerant may be present, as specified in ČSN EN 14 624. The bar indicator on the main screen is used for identifying the leak location, indicating concentration changes. An increasing number of bars signals a rising concentration. If the device remains exposed to a constant concentration of gas for an extended period, the number of bars decreases.

The main screen also displays the current refrigerant concentration as background information.

If the detector was previously not fully ventilated or has been off for a long period, it may indicate gas presence upon startup. Allow the detector to ventilate in clean air for a few minutes – the signal should drop to zero. Sensor overload is indicated by the `OVR` message. Sensor errors are indicated by the `ERR` message.

Gas Type

The detector allows selection of whether the concentration should be displayed in ppm corresponding to R134A or R32. To change the setting, wait on the startup screen after turning on the device. When the `GAS` label appears in the lower left corner, press ⏻. This changes the gas type. The selected gas type is displayed in the upper left corner of the screen.

Sound Indication

Using the symbol 🔊, the value can be set in the range of 1 to 10. This corresponds to the bar indicator level above which sound indication is activated. If `--` is selected, sound indication is disabled.

Charging the Device

The GORF device is powered by a battery permanently built into the device body. During measurement, the device continuously monitors its status. The battery status is indicated on the device display. For charging, an adapter with an output voltage of 5 V and a minimum output current of 0.5 A with a USB-C connector is used.

Detector Inspection and Calibration

Depending on the frequency of use, it is recommended to inspect the GORF detector once every 6 months (for very frequent or continuous use) to once a year (for less frequent use) using a calibration gas mixture. It is recommended to send the device to the manufacturer for inspection.

For an indicative functional test to check whether the device responds to gas, a test ampoule can be used. This method utilizes the fact that the sensor also reacts to flammable vapors. Bring the ampoule or another container containing liquid with an alcohol additive close to the sensor, so that it is about 0.5 cm from the neck of the container. The detector must respond. After the test, the detector should be left in an operational state to ventilate in fresh air for at least 15 minutes. It is not advisable to test the detector with the test substance for an extended period.

Detector Accessories

The detector is supplied with a power adapter and an ampoule containing a test substance.

Storage and Service

If the device cannot be turned on or if the display continuously shows the symbols `ERR` or `OVR`, send it for servicing to the manufacturer at the address below.

Detectors should be stored only for the necessary period under the above-mentioned conditions. If the detectors are not exposed to any chemicals during storage, they will not be damaged. However, the recommended calibration inspection period continues during storage. If stored for more than 6 months, it is advisable to recalibrate the detector before use. The year of manufacture can be determined from the last two digits of the serial number.

Warranty and post-warranty service or technical assistance can be provided by the manufacturer.

If the device is decommissioned, it must be disposed of in an environmentally friendly manner, i.e., handed over to a company authorized for electronic waste disposal.

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