

ALEVEL 1F5

User Manual

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1 DISCLAIMER



READ INSTRUCTIONS - all the safety and operational instructions should be read before the product is operated



TRANSPORT - every item removed from the multipack must be properly secured (e.g. with bubble wrap) for further transport



ACCESSORIES - the installation of the product should follow the manufacturer's instructions and should use mounting accessory recommended by the manufacturer



RECYCLING - the used devices should be returned to the manufacturer for proper disposal



REPLACEMENT PARTS - when replacement parts are required, make sure that only replacement parts specified by the manufacturer are used



SPECIAL USAGE CONDITIONS

- Increased ambient temperature range: $-40^{\circ}\text{C} \div +60^{\circ}\text{C}$
- IP 68 – device protected against dust penetration and immersion in water (up to 1 meter). Whenever it is necessary to open the cover, secure the device against dust and moisture by other means
- Never rub the enclosure surface of ALEVEL 1F5 using a dry cloth because of the danger of electrostatic discharge



WARRANTY - failure to follow the instruction or any modifications/alterations in the operations described in this instruction may void the warranty



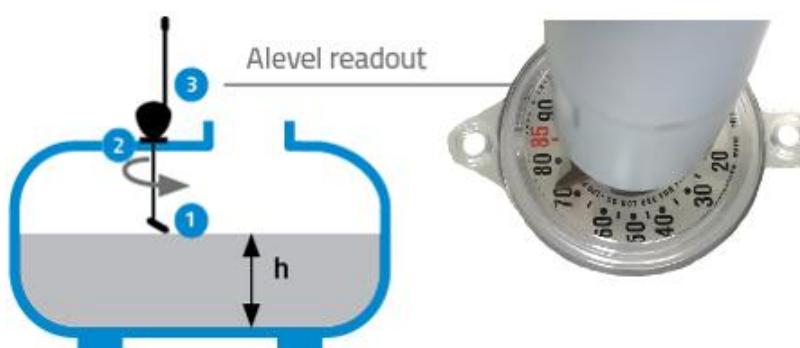
VIBRATION - product is not designed to work in heavy vibration or mobile application

2 Product overview

ALEVEL 1F5 is a smart LPG tank sensor that provides wireless communication either autonomously with IoT (LPWAN) technologies or with external gateway. OKO 5575 battery powered is a recommended gateway that collects data from up to 6 ALEVEL 1F5 devices in range. ALEVEL 1F5 is engineered for direct & easy installation on various types of LPG tanks. Its own mechanical dial fits typical float arm level gauges.

2.1 Operating Principle

ALEVEL 1F5 reads LPG level in tanks and sends the data periodically over radio link. The movement of the arm (1) results in the circular motion of the magnet (2) and the change of magnetic field - ALEVEL reads the magnetic field direction based on the Hall Effect. Obtained value is converted to an output that is indicative of the float arm position and hence the amount of fuel contained within the tank.



Additionally, the built-in mechanical level indicator allows immediate visual readout regardless the electronics (3).



3 Functional & Technical Features

General Features

Dimensions : H x H (with antenna) x W x D:
3.15" (5.59 ") x 1.30" x 0.90"

Communication

Designed for IoT technologies Sigfox, LoRa.
Radio frequency 902-928MHz ISM band.
IMR Radio range: 200m for above-ground tanks,
20m underground for 1mW transmission.
Frequency, channel, output power can be
tailored to local requirements.
EMC, R&TTE Compliant.

Power supply

Non replaceable Lithium battery, 10 years lifetime.
ALEVEL 1f5 is able to provide battery level and the estimated lifetime.

Sensor & Readout Data

Data transmitted over radio link periodically or by configurable schedule.
Trasmitted data: tank level, temperature, battery status.
Measuring the direction of the magnetic field, Hall effect sensor.
Resolution 1%, the total accuracy of 5%.
Ambient temperature sensor, accuracy: + -5.4 °F.

Environmental Parameters for ALEVEL 1F5

Operating temperature :

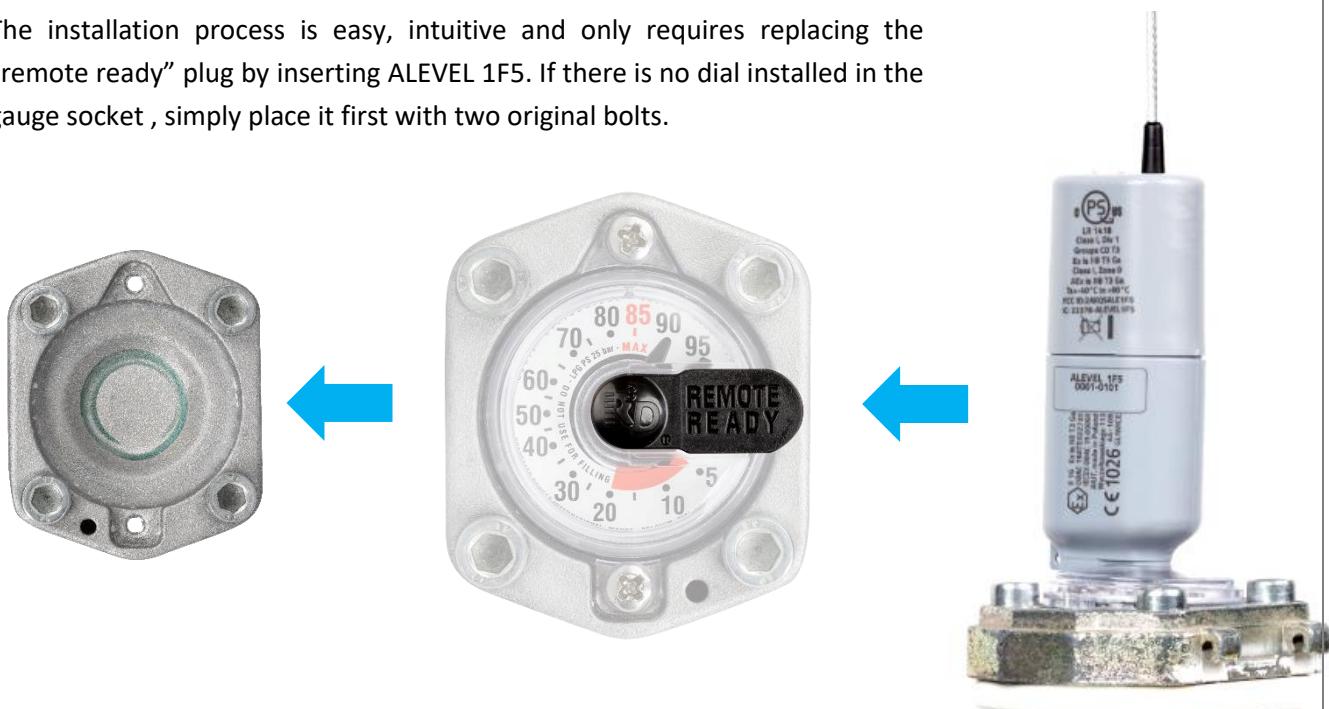
-22°F to +140°F, Storage temperature up to +158°F.
IP 68 – can work submerged in 1 meters water deep (may reduce radio communication range).
UV resistant.

4 Installation

The casing of ALEVEL 1F5 is sealed and non-openable. The device is equipped with non-replaceable battery. If the battery of the device is discharged it should be replaced with new ALEVEL 1F5.

4.1 Installation on-site

The installation process is easy, intuitive and only requires replacing the “remote ready” plug by inserting ALEVEL 1F5. If there is no dial installed in the gauge socket, simply place it first with two original bolts.



4.2 ALEVEL 1F5 activation

For safe transport and in order to minimize the battery consumption during the storage (prior the installation), the device is in sleep mode directly after the production. To wake ALEVEL 1F5 up a dedicated tool¹ is required.

5 FCC PART 15 COMPLIANCE

Modification statement

AIUT Sp. z o.o. [Ltd.] has not approved any changes or modifications to this device by the user. Any changes or modifications could void the user's authority to operate the equipment.

Interference statement

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Wireless notice

This device complies with FCC radiation exposure limits set forth for an uncontrolled environment and meets the FCC radio frequency (RF) Exposure Guidelines. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

¹ If the activating procedure is performed in potentially explosive area it must be performed with the tool certified for use in hazardous areas. Otherwise, the procedure must be performed beyond the area.

This device needs to be installed and used on distance greater than 20 cm from human body.

FCC Class B digital device notice

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

6 IC LICENSE COMPLIANCE

Interference statement [EN]

This device complies with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Interference statement [FR]

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

Wireless notice [EN]

This equipment complies with the ICES-003 radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20cm between the radiator and any part of the human body.

Wireless notice [FR]

Cet équipement est conforme aux limites d'exposition aux radiations ICES définies pour un environnement noncontrôlé. Cet équipement doit être installé et utilisé à une distance minimale de 20 cm entre le radiateur et une partie de votre corps.