

Description

NivelWatcher R02 is an autonomous and versatile smart fill level sensor based on **radar technology**. It is a low-power intelligent device **capable of adapting to any container type and self-calibrating** to accurately and reliably measure the volume occupied by bulk products (liquids or solids). Radar technology plays a key role in measuring - with precision and robustness - the distance from the device to the surface of the stored product.

Measurement frequency and transmission interval are user-configurable to suit each application. NivelWatcher R02 supports LoRaWAN® and Cellular (NB-IoT or LTE Cat-M) connectivity options.

Applications

- Monitoring of **bulk liquid levels** in fixed or portable tanks:
 - Fuel – Kerosene, Oil, Diesel.
 - Lubricants.
 - AdBlue.
 - Waste oil.
- Monitoring of **bulk solid levels** in vertical silos:
 - Animal feed.
 - Grains.
 - Pellets.

Auto-calibration

The calibration process automatically adjusts the level measurement in tanks with no need to enter physical dimensions or carry out manual procedures, simplifying installation and ensuring a **true plug-and-play experience**. This system produces a precise distance-to-volume conversion function specific to each tank, **improving reliability and reducing errors**. For auto-calibration, the user simply selects the tank geometry (prismatic, vertical cylinder, horizontal cylinder, etc.) and the nominal capacity in litres or kg, enabling quick and straightforward initial configuration.

Technical

Name and model:	NivelWatcher R02 - NWR02.
Battery:	3.6V @ 8,500 mAh Li- SOCL2 type. Safety standard: IEC EN 60086-4.
Battery Life:	1 transmission/day > 5 years. 48 transmissions/day > 3.6 years.
Communications:	LoRaWAN®. Cellular: NB-IoT or LTE Cat-M.
Accuracy:	± 5mm @ 1σ (tank mode). 0.1% (silo mode).
Environmental Protection:	IP67 ANSI-IEC 60529 (EN 60529).
Others	Turn on/off and manual reset via magnet.

Installation



Threaded plug installation



Adhesive fixing on plastic tank

Features

- Long-life battery — over 5 years.
- Tank mode and silo mode.
- Built for demanding environments.
- Programmable readings — down to every 5 minutes.
- ATEX certified for explosive atmospheres.
- CE, REACH and RoHS compliant.

Working modes / Measurement schedule

NivelWatcher R02 features multiple operating modes, adapting to the requirements of each application or use case.

Tank mode: measurement range from 10 cm to 400 cm.

Silo mode: extended measurement range from 20 cm to 14 metres (standard version).

Measurement scheduling can be configured by specifying the times at which level readings are required, with resolution down to 5 minutes. This flexibility maximises device performance whilst conserving battery during idle periods.

Dimensions

Dimensions **See drawing.**
Weight **300 g.**

