

Nextriv Sense Range

Ultrasonic distance and fill level sensor

NX-SN-RNG

Nextriv Sense

An ultrasonic distance and fill-level sensor for waste containers, bulk material hoppers and parking bays. It measures contact-free from 3 to 450 cm with 1 mm resolution and additionally detects tilt (3-axis accelerometer) and temperature up to 125 °C — e.g. smouldering waste. The sealed IP67 housing with a conformal coating on the electronics operates from -30 to 70 °C, and two replaceable 9,000 mAh batteries last more than 10 years. Three factory operating modes (standard, container, parking) and configuration with a single smartphone tap (NFC) make deployment tuning-free.



3–450 cm

distance measuring range

> 10 yrs

battery life

IP67

ingress protection

~15 km

open-terrain range

Key features

- Non-contact ultrasonic measurement from 3 to 450 cm with a short dead zone and a wide 60° beam
- 3-in-1 measurement: distance and level + tilt (3-axis accelerometer) + temperature (NTC thermistor up to 125 °C) — detects smouldering waste
- Three factory operating modes: standard, container and parking — deployment without parameter tuning
- Over 10 years on two replaceable 9,000 mAh batteries; approx. 5 years in parking mode
- IP67 plus a conformal coating on the electronics — resistant to rain, washing, dust and fumes; operation from -30 to 70 °C
- Configuration over NFC from a smartphone or remotely from the platform (downlink) — no need to open the housing
- Event-driven reporting: a tilt or an abrupt change in distance triggers an immediate report outside the normal rhythm
- Flame-retardant ABS + PC housing rated UL94 V0; screw-mounted to a flat surface in minutes

Technical specification

Measurement — distance / fill level	
Measuring range	3...450 cm
Accuracy	±(1 cm + 0.3% of measured distance), within -15...60 °C
Resolution	1 mm
Beam angle	60°
Sensing element	ultrasonic transducer (non-contact measurement)

Measurement — temperature

Measuring range	-40...125 °C
Resolution	0.1 °C
Sensing element	NTC thermistor

Measurement — position (tilt)

Device status	normal / tilted
Sensing element	3-axis accelerometer

Radio connectivity

Technology	long-range, low-power radio (LPWAN)
Radio band	EU868 (EU); regional variants: US915, AU915, AS923, IN865, KR920, RU864
Tx power	up to 16 dBm (EU868)
Receiver sensitivity	down to -137 dBm
Sensor-gateway range	up to approx. 2 km in built-up areas / approx. 15 km in open terrain
Communication	two-way — readings to the platform, remote configuration via downlink

Device features

Operating modes	three factory presets: standard, container and parking — reporting rhythm matched to the scenario
Event-driven reporting	a tilt or an abrupt change in distance triggers an immediate report
Threshold alarms	on-device thresholds + alert rules in the Nextriv platform
Calibration	reading calibration from the app
Configuration	mobile app over NFC; remotely via platform downlink
Power on / off	NFC or button (inside the housing)
Indicators	1× status LED (internal)
Button	1× power / reset (internal)

Power

Batteries	2× lithium Li-SOCl ₂ ER26500 (C size), 9,000 mAh, replaceable
Battery life	over 10 years — standard mode (10-min interval) and container mode (20-min interval); approx. 5 years — parking mode (12 triggers per day); 25 °C [1]

Enclosure and operating environment

Operating temperature	-30...70 °C
Ambient humidity	≤95% RH, non-condensing
Ingress protection	IP67 (suitable for outdoor use)
Electronics protection	conformal coating — resistant to moisture and fumes
Housing	ABS + PC, flame-retardant (UL94 V0), black-grey
Dimensions	118 × 65 × 32.5 mm (4.65 × 2.56 × 1.28 in)
Weight	181.4 g (batteries included)
Mounting	flat-surface mounting with screws (2 × Ø4 mm mounting holes)

Compliance and approvals

Approvals	CE, FCC
Environmental compliance	RoHS

Ordering information

Product code (SKU)	NX-SN-RNG
Variants	standard radio variant (LPWAN, described in this datasheet) or a cellular variant (LTE-M / NB-IoT) with GNSS positioning — specify the variant when ordering
System requirement	a Nextriv Hub gateway (e.g. NX-GW-MINI, NX-GW-PRO)

[1] Battery life determined under laboratory conditions — indicative value; the actual time depends on the operating mode, reporting interval and radio conditions.

Specifications are subject to change without notice. The latest document versions are available in the download centre: nextriv.com/files. Questions: nextriv.com/contact.