

Nextriv Sense Waste

Laser fill-level sensor for waste bins

NX-SN-WST

Nextriv Sense

A laser (ToF) fill-level sensor for small and medium waste bins. A narrow measurement cone of approx. 27° and a practically zero dead zone deliver a reliable fill reading even in small containers, with ±2 cm accuracy across a 2–350 cm range. A built-in 3-axis accelerometer detects tilt and the lid status, while a thermistor with a range up to 125 °C raises the alarm for smouldering waste. IP67 sealing with a damp-proof coating, NFC configuration and around 10 years on replaceable batteries keep it maintenance-free for years.



±2 cm

measurement accuracy

2–350 cm

measuring range

~10 yrs

battery life

IP67

ingress protection

Key features

- A ToF laser instead of ultrasound — approx. 27° field of view and a practically zero dead zone, made for small and medium containers
- ±2 cm accuracy across the whole -20...70 °C temperature range — a trustworthy fill percentage in summer and winter
- A "3-in-1" sensor: level + position (tilt, lid status — 3-axis accelerometer) + -40...125 °C temperature with a waste-burning alarm
- Two factory operating modes (standard / bin) — the device arrives configured for its scenario
- Configuration over NFC from a smartphone or remotely from the platform (downlink) — no dismantling the housing
- IP67 and a damp-proof coating on the electronics — the sensor endures bin washing, rain and waste fumes
- Around 10 years on two replaceable 9,000 mAh batteries — the upkeep cost of a bin fleet close to zero
- Flame-retardant ABS + PC housing (UL94 V0), screw-mounted to the underside of the lid — invisible to users

Technical specification

Measurement — distance (fill level)	
Measuring range	2...350 cm
Accuracy	±2 cm (-20...70 °C)
Resolution	1 mm
Field of view	approx. 27°
Sensing element	laser time-of-flight (ToF) sensing element

Measurement — temperature

Measuring range	-40...125 °C
Resolution	0.1 °C
Sensing element	NTC thermistor
Purpose	detection and alarm of smouldering / burning waste

Position detection

Device status	normal / tilt
Sensing element	3-axis accelerometer
Purpose	detecting a toppled container and the lid status

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	standard / bin (factory pre-configured)
Threshold alarms	on-device thresholds + alert rules in the Nextriv platform
Reporting	switchable tilt and distance reporting
Configuration	mobile app over NFC; remotely via platform downlink
Power on / off	NFC or button (internal)
Indicators	1× LED indicator (internal)
Button	1× power / reset (internal)

Power

Batteries	2× lithium Li-SOCl ₂ ER26500, 9,000 mAh, replaceable
Battery life	approx. 10 years — standard mode (10-min interval) or bin mode (20-min interval), 25 °C [1]

Enclosure and operating environment

Operating temperature	-30...70 °C
Ambient humidity	≤95 % RH, non-condensing
Ingress protection	IP67; an additional damp-proof coating on the electronics
Housing	ABS + PC, flame-retardant (UL94 V0), black-grey
Dimensions	118 × 65 × 30 mm (4.65 × 2.56 × 1.18 in)
Weight	208.3 g (batteries included)
Mounting	on flat surfaces with screws — e.g. to the underside of the bin lid

Compliance and approvals

Approvals	CE, FCC
Environmental compliance	RoHS

Ordering information

Product code (SKU)	NX-SN-WST
Variants	standard (LPWAN radio) or cellular (NB-IoT/Cat M1) 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 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.