

# AERINOS™

ADS-320 NBloT/LTE-M

Waste Monitoring



## Introduction

ADS-320 is an ultra-low power NBloT/LTE-M end node with multiple sensor support. The unit incorporates a built-in modem, a USB serial port, digital inputs, a 3-axis digital accelerometer, a Laser Imaging, Detection, and Ranging (LIDAR) sensor and a Coulomb meter for battery monitoring. An ultra-low power microcontroller is utilized for data sampling, subsystem activation and overall system control. The unit incorporates a Lithium Thionyl battery supplying system operation for up to 10 years.

## Modes of operation

Modes of operation include autonomous battery operation or power supply through the USB port for unit configuration. During battery supplied operation, only the low power microcontroller is awake. The microcontroller activates the modem during data transfer, as well as other subsystems for sampling and logging.

## Features

- Power network independent NBloT/LTE-M End Node
- Up to 10 years maintenance free operation
- Quick and easy installation
- Internal 3-axis digital accelerometer measuring angles of inclination in 2 axis and capturing acceleration events
- Internal LIDAR sensor, level/distance
- Built-in battery monitoring

## Applications

- Waste Management
- People counting
- Building Management & Home Automation
- M2M systems

## Technical characteristics

Power supply	
Battery	Internal 13.0 Ah Lithium Thionyl
External	5V (USB power )
Consumption	20µA max (Low power operation) 2 mA (AI sampling w/o sensors) ~50mA (Alarm messaging)
Digital inputs	4, 0-30VDC or potential free contact inputs
Counters	1, 1 kHz max.
Accelerometer	16bit, ±16g, ±0.1° Accu.
LIDAR	0-4m, 15-27° FoV, 1cm Accuracy
Serial port	USB serial, 9600 to 115200 bps
Modem	LTE Cat-M1/NBloT, Sierra Wireless HL Series78xx
Antenna	internal or external, ISM
Indications	2 LED, network status, device status
Temperature	-20°C...+70°C operating
Protection	IP65
Dimensions	154 x 66.5 x 60 mm
Weight	0.3 kg (w/o Battery)

## Data Acquisition

Sampling period and data send rate are user definable. Ultra low power standby mode followed by frequent data recording and transmission can be selected to fit the application needs, while maximizing the battery life.

## Tilt Sensing

The unit has an optional accelerometer which is used for measuring angle inclination, tilt & rotation.

## Distance Measurement

The unit has an optional built in LIDAR ranging sensor which can be used for measuring level/distance with high accuracy.

## Coulomb Meter

A user enabled Coulomb Meter allows for the monitoring of the battery's consumption.

## Setup and programming

The unit can be programmed locally through the serial by using simple ASCII configuration commands. The command set features commands for configuring scaling and timing parameters.

## Enclosure

Plastic enclosure (IP65) for in- and outdoor use. Lidar IR filter for LIDAR sensor.

## Firmware features

Accelerometer	Tilt Sensing
Sampling interval	1-255 minutes
Sensor warm-up time	1-255 sec
Transmission rate	0-4096 minutes
Programming	ASCII command set
Local setup	via USB serial port
LIDAR	Distance measurement

## Ordering information

Code	ADS-320
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