

**nexxiot**

# Loadtracker

DATA SHEET



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## 01 Nexxiot Loadtracker

**Nexxiot Loadtracker** is a zero-maintenance hardware unit for enabling real-time monitoring of load status for non-powered rail cars. Device installation can be done in under 10 minutes ensuring quick and effortless onboarding. Once set up, the Loadtracker device provides real-time updates of the load inside the rail-cars (as often as every 15 minutes). Energy management techniques ensure a hassle-free operation for a guaranteed time of 6 years.

Nexxiot Loadtracker is a new generation device, designed to ensure compliance with the strictest ATEX and IECEx safety class allowing devices to also operate in Hydrogen handling environments. New materials have been developed to provide additional resistance to damage even when temperatures reach -40°C.

## 02 Use Cases & Return on Investment

**Full / Empty Detection** – fleet dispatchers can gain instant view on whether the railcars are full or empty and whether they are available for utilization. This in turn offers ability to improve scheduling and reduce asset turnaround times.

**Tilted Load Detection** – prevent tilted loads to avoid damage to the cargo, infrastructure or the asset itself.

**Loading Events Detection** – combined with triggers, the operators can get instant notification when a loaded asset leaves a terminal.

**Quick Setup** – installation is assisted by the Nexxiot Pairing App and can be done in under 2 minutes. To simplify the training, the In-app guide offers a possibility to get a per asset-type mounting and pairing instructions along with a video guide and direct support contact.

**Zero Maintenance** – Nexxiot Loadtracker devices are 'install & forget' - there are no regular servicing or battery changes required. Nexxiot devices have a minimum 6-year guaranteed lifespan.

**ATEX Certified** – an intrinsically safe hardware design is a must-have to guarantee a safe operation of hardware in hazardous and explosive environments such as Hydrogen transport, petrochemical environments, grain, flour or sugar plants. Nexxiot Loadtracker has been designed ground-up with most restrictive industrial requirements in mind and has passed rigorous testing to achieve IECEx and ATEX certification in the process.



**Rugged & IP66/IP67 Certified** – a special plastic ensures that devices can withstand a great amount of damage without sacrificing their integrity. Devices are also entirely weather sealed for operation in the harshest of weather conditions – be it Scandinavian Winters or Middle-Eastern summers.

**Multiple Configuration Options** – as a starting point, a minimal single-sensor setup allows for basic detection of full/empty levels. A more complex multi-sensor setup can be introduced when additional use-cases, such as tilted load detection, are required.

Full/Empty  
Status






Combined  
Triggers

Overload  
Detection

Tilted Load  
Detection




Enhanced Cargo  
Quality Control



 <b>Product</b>		Loadtracker
 <b>ID</b>		ASL.1A
 <b>Physical</b>	Size	138.5 mm (4.45 in) × 75 mm (2.95 in) × 34 mm (1.35 in) without ultrasonic  138.5 mm (4.45 in) × 95 mm (3.75 in) × 34 mm (1.35 in) with ultrasonic
	Weight	425 g ± 10 g (0.937 lb. ± 0.02 lb.) (without mounting accessories)
	Enclosure Material	LEXAN™ 1) EXL9330
 <b>Environmental</b>	Operating temperature (EN 50155, Class TX)	-40 °C ... +50 °C (-40 °F ... +122 °F); Electronics operational up to +85 °C (+185 °F)
	ATEX ambient temperature (EN 60079-0)	-35 °C ... +60 °C (-31 °F ... +140 °F)
	Altitude	2000 m (6562 feet)
 <b>Energy</b>	Battery type	LiMgO <sub>2</sub> – Primary
	Nominal battery voltage	3 V
	Battery capacity	6000 mAh (2 × 3000 mAh)
	Nominal current (average)	76 µA
	Maximum current (under normal operation)	150 mA
	Battery certification	UN 38.3, UL 1642, IEC 60086-4, IEC 60079-11, RoHS, REACH
	Energy harvesting source	None

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 <b>IEEE 802.15.4</b>	Frequency range	2400 MHz ... 2480 MHz
 <b>NFC</b>	Frequency	13.56 MHz (passive, connected to microcontroller)
 <b>Lifetime</b>	Maintenance free	6 to 10 years depending on environmental conditions and use of device



**Environment:**

RoHS  
WEEE  
EN 61373:2010 Category 2 (Vibrations and shocks for rail)  
DIN EN 60529:2014 (IP66/IP67)  
ISO 20653:2013 (IPX9K)  
EN 50155:2007  
EN 50125-1:2014  
IEC 60721-3-5:1997  
DIN EN IEC 60068-2-5:2019

**ATEX and IECEx:**

ATEX Certification Number: EPT 20  
ATEX 3600 X  
IECEx Certification Number: IECEx EUT  
20.0004 X  
2014/34/EU  
EN/IEC 60079-0, edition 7.0  
EN/IEC 60079-11, edition 6.0  
Ex II 2 GD  
Ex ib IIC T4 Gb  
Ex ib IIIC T135°C Db

**Product Safety:**

IEC 62368-1:2014  
DIN EN 45545-2:2016

**Battery:**

UN 38.3, UL 1642

**EMC:**

ETSI EN 300 328 V2.1.1  
ETSI EN 300 330 V2.1.1  
ETSI EN 301 489-1 V2.2.0  
ETSI EN 301 489-3 V2.1.1  
ETSI EN 301 489-17 V3.2.0  
EN 50121-3-2:2016/A1:2019  
(EMC for Rail)

