

AR1

# AxleRing\*

PATENTED SELF-CHARGING GPS UNIT FOR TRACKING AND MONITORING OF RAIL CARS

## USAGE AND CHARACTERISTICS

- » For railway wagon axles
- » Odometer counted by axle turns
- » Unique unit ID allows axle identification
- » GPS tracking at 10 min interval
- » Self-charging (patented energy harvesting)
- » Simple installation by connection around wagon axle
- » G-shock detection
- » Axle blocking detection
- » BT 5.0 external interface for up to 100 wireless sensors (optionally)
- » NB IoT and Cat M1 connectivity (optionally)



## TYPES AVAILABLE\*

TYPE	GSM	BATTERY	RF Interface
20100463	2G	Lilon 7 800 mAh rechargeable	-
	2G	Lilon 7 800 mAh rechargeable	Bluetooth 5.0
	2G/4G NB-IoT/Cat M1	Lilon 7 800 mAh rechargeable	-
	2G/4G NB-IoT/Cat M1	Lilon 7 800 mAh rechargeable	Bluetooth 5.0

\*For customized solutions - combination of 2G, 4G NB IoT and/or Cat M1 - contact our sales department

## ACCESSORIES

BT temperature sensor
BT robust temperature sensor
BT access card
BT door sensor



Photo from AxleRing installation

\* Temporarily available for testing purposes only. For more details please contact our sales representative.

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## TECHNICAL PARAMETERS

<b>GSM</b>	2G	850/900/1800/1900 MHz	
	version 4G NB-IoT/Cat M1	B1@2100MHz, B3@1800MHz, B8@900MHz, B5@850MHz, B20@800MHz, B28@700 MHz	
	version 4G LTE Cat M1 /NB-IoT/ EGPRS	B1/B2/B3/B4/B5/B8/B12/B13/B18/B19/B20/B26/B28/B39 - for Cat M1 only @LTE 850/900/1800/1900 @EGPRS	
	SIM	SIM Chip	
	Types of communication	NB-IoT/GPRS to Positrex VPN	
	GPRS internet connectivity	Class 12	
		Static & dynamic IP VPN, UDP protocol	
		128bit security encryption key	
FW upgrade			
Configuration settings			
On-line value reading			
Report memory reading			
Control			
<b>GNSS</b>	GPS + GLONASS	33 tracking channels, 99 acquisition channels, 210 PRN channels	
<b>ANTENNAS</b>	GPS, GSM, BT 5.0	Internal	
<b>BATTERIES</b>	Lilon	7 800 mAh	
	Charging	> 40 km/h (25mph)	
	Discharging	5 mAh/day	
<b>INTERNAL SENSORS</b>	Hall sensor	Number of turns - exact tacho and speed	
		Blocked axle detection	
<b>WIRELESS EXTERNAL SENSOR INTERFACE</b>	Bluetooth low energy 5.0	Open/Closed sensor	
		G-shock sensor	
		Ambient temperature sensor	
<b>INTERNAL MEMORY</b>	Flash 512 kB	Capacity 5000 events or GPS positions	
<b>TEMPERATURE</b>	Temp. range	-35°C up to +70°C	
<b>SPEED LIMITATIONS</b>	Maximum speed	180 km/h ; 112 mph	
<b>PROTECTION CLASS</b>	IP66	Waterproof	
<b>WEIGHT</b>		450 g	
<b>DIMENSIONS</b>	Plastic ring (inner diameter/outer diameter x width)	ø195 mm / ø284 mm x 100mm	
	Axle diameter	for ø150 mm, ø175 mm, ø191 mm	
<b>REQUIRED SPACE</b>	On each side of device	250 mm	
<b>STANDARDS</b>	EMC	EN 50121-3-2 ed.4   EN 61000-6-4:2007+A1:2011   EN 55032:2015   EN 55024:2010	
	LVD	EN 62368-1:2014+A11:2017	
	Climatic testing	EN 50155   EN 60068-2-2   EN 60068-2-1 ed.2   EN 60068-2-30 ed. 2	
	Shock and vibration	EN 61373 ed. 2	
	IP code	EN 60529	