

This page contains comparison of different batteries to be used for Ise01 LoRaWAN Soil Moisture Sensor.

**Battery Voltage description:** The battery for the Ise01 should be between 3.0V to 3.6V. If we need to use a battery less than 3.3 volts we have to remove diode D1 and shortcut the two pads of it. Diode D1 lays between the main circuit and the battery. If battery is less than 2.7 volts user have to replace the battery.

Specific power and Specific energy are important factors to keep in mind before choosing a battery.

**Specific energy:** defines the battery capacity in weight (Wh/kg). The capacity relates to the runtime.

**Specific power:** It's the ability to deliver a high current and indicates loading capability.

	Current	Voltage	end-of-discharge voltage	end-of-charge voltage	Cost	Charge cycle	Lifespan	Safety	Specific Power	Specific Energy	Thermal runaway	Operating Temperature	C rate
<b>Lithium Thino-Chloride</b>		3.6 V					High				hermeticity guaranteed up to +110°C	-60C and +85C	
<b>Nickle Manganese Cobalt Oxide</b>	mA	3.60V, 3.70V nominal; typical operating range 3.0-4.2V/cell, or higher			Low	1000-2000	Moderate	Moderate	Moderate	High	210°C		
<b>Lithium Iron Phosphate</b>		3.20, 3.30V nominal; typical operating range 2.5-3.65V/cell	2.0V	3.65V	Low	2000 and higher	High	High	High	Low	270°C (518°F) Very safe battery even if fully charged	-20°C~ +75°C	
<b>Lithium Titanate</b>		2.40V nominal; typical operating range 1.8-2.85V/cell			High	3,000-7,000	High	High	Moderate	Low	One of safest Li-ion batteries		1C typical; 5C maximum, charges to 2.85V
<b>Lithium-Ion Polymer</b>					Low		Low	Low					
<b>NiMH</b>		1.2V				180-2000			250-1,000 W/kg	60-120 W-h/kg		-30C to +85C	

References:

- <http://wiki.dragino.com/xwiki/bin/view/Main/User%20Manual%20for%20LoRaWAN%20End%20Nodes/LSE01-LoRaWAN%20Soil%20Moisture%20%26%20EC%20Sensor%20User%20Manual/>
- <https://owlcation.com/stem/Comparing-6-Lithium-ion-Battery-Types>

From: <https://student-wiki.eolab.de/> - HSRW EOLab Students Wiki

Permanent link: <https://student-wiki.eolab.de/doku.php?id=eolab:treemap:batterycomparison&rev=1659535763>

Last update: 2023/01/05 14:38

