## ACTILITY - ELSYS SOIL MOISTURE EVALUATION KIT



Whether you are on-site or off-site, a soil moisture monitoring system ensures you always keep your plants healthy by delivering the exact quantity of water they need. Maximize your profits with our Soil Moisture LoRaWAN solution.

This **Soil Moisture Solution**, powered by Elsys & WMW, is an ideal to monitor your crops.

This tutorial provides you with the key steps to complete to get started with this solution.

## Before you start...

In order to complete this tutorial, you will need at least :

- The "Soil Moisture Kit" available on ThingPark Market. This kit contains the required HW and SW parts to implement the solution:
  - o 1 x Elsys ELT-2 and its accessories

- 1x three-month access to the light version of WMW-HUB application.
- A ThingPark Community account with an active LoRaWAN<sup>™</sup> gateway. If you don't have a gateway, you can purchase one on ThingPark Market, ready to be activated on ThingPark Community.

## **Step 1: Connect ThingPark Community to WMW application**

Your ThingPark Community application are accessible through the following URL.

Once you log in, you should see a screen displaying the number of base stations and devices you've connected on this account as well as their status. No device or base station should be connected for now.

Select "Application > Create" on the list on the left to create your WMW application, it is mandatory in order to send the device's messages to WMW; select the "https://" option.



A few fields are to be filled in order to complete this operation:

- Name: Name of your application displayed in ThingPark Community
- URL: you MUST enter the following URL: https://eu1.api.wmw-hub.com/lora/store
- **Content Type**: JSON
- Additional information: can be filled with useful information such as the device location.

#### Your Connection Type

#### Basic HTTPS

https://

Supports	HTTPS-bas	ed connection	ns, also kno	wn as NS-AS	Tunnel Interface.
Device pa	ayloads are	exchanged i	n encoded	format witho	ut the support of
payload	drivers. Th	s connection	type does	not support	message queuing
services.					

Change connection type?

#### Set Your Connection\*

Name <sup>*</sup> 🚯	
WMW connector	~
JRL* 🕕	
https://eu1.api.wmw-hub.com/lora/store	<ul> <li>Image: A start of the start of</li></ul>
Content Type <sup>*</sup> 🚯	
JSON	•
unnel Interface Authentication Key $^{*}$ 🚯	
90-b9-18-a2-a7-ff-43-d2-bb-d8-74-22-d8-5f-91-f8	C
Custom HTTP Headers 🕕	
No custom header configured	Ð

Now that you have set up the connection on the ThingPark side, we need to do the same on WMW side. Copy on a note the Tunnel Interface Authentication Key that you find above when you are creating the WMW application.

Click on "Create" to finish the creation of this side of the connection and go in your list of application. There, you will have to also copy the ID of your connector on your side note.

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	CONNECTIONS			+±≡
Base Stations ~	https://	TpxDev connector	TWA_100002164.1105.AS	26 1
Devices ~	https://	Vertical M2M	TWA_100002164.1120.AS	5
Connections ^	https://	Mydevices	TWA_100002164.1132.AS	з
Create	https://	ADA IoT platform	TWA_100002164.1228.AS	6
Manage ~	https://	WMW	TWA_100002164.1267.AS	6
	ТРХ	Opinum Datahub	TWA_100002164.1462.AS	3
	https://	Favendo Commander	TWA_100002164.2089.AS	1

Let's input those information in WMW : log in your account and on the top right, select the "Details" tab, if you scroll down a bit, you will find the "Connection" section.

A few fields are to be filled in this section in order to complete this operation:

- **Network**: You **MUST** choose "Thingpark dx-api with extra authentication + uplink security"
- **AS ID**: Paste the ID you copied earlier (it begins with TWA).
- **AS key**: Paste the key you copied when you where creating the connection of ThingPark side.
- **Tunnuel interface domain:** Paste the domain your connector is on without the https:// part.

Don't forget to turn on the "use uplink security" option.

Network	
Thingpark tunnel interface + uplink security	~
AS ID *	AS key
TWA_100002164.1267.AS	
Tunnel interface domain (ex. iot.thingpark.com) *	Use uplink security
community thingpark in	yes 📃

## **Step 2: Activate your Elsys ELT-2 sensor on ThingPark Community**

Now that you have your application, you can add your device on ThingPark too.

Go to "Device > Create" on the list on the left, if Elsys is in the list of the device manufacturers, select it, if it's not, select "View more manufacturers".

		Devices	✓ Search Q Noti	D ⑦ ☑ D ifications Help Contact Us My Ac					
Dashboard	CR	EATING A DEVICE IN 3 STE	PS						
Base Stations 👻	Provide information about you	Results information about your device to exact and exists if in your I.Y. advants							
Devices ^	Plovice information about you	Provide information about your device to create and register it in your io' network.							
List	3	Select Your Device Manufacturer*							
Create									
Import	ia) adeunis	LORaWAN	CELSYS.se						
Applications ~									
Manage +	Adeunis	Generic	Elsys						
	Abeeway	FLASHNET							
	Abeeway	Flashnet	View More Manufacturers						

Once again, you will have to fill field to create your device:

- **Model**: Choose the Elsys ELT-2 corresponding to your region (AS923 correspond to Asia, AU is for Australia, ETSI is for Europe and FCC is for the United-States).
- **Name**: The name your device will have in ThingPark Community.
- DevEUI, AppEUI and AppKey: Codes you should have received with your device.

Select the application you created for WMW; it should have a green dot showing that it's working well.

Leave the mode to "No location" and click on "Save" finalize the operation.



## **Step 3: Deploy your Elsys ELT-2 sensor in the field**

Elsys ELT-2 Sensor Overview

ELT-2-2 is the ideal sensor for measuring in advanced places or in extreme weather conditions. It is easy to install and configure to form your solution. ELT-2-2 has two generic inputs. You can configure ELT-2-2 for external temperature probe, pulse counting, analog-input 0-10V, digital-input, water leak, switch, distance sensor, soil moister sensor, and many more options. ELT-2-2 can be equipt with add on modules to get extra features like external PT1000 sensors, load cell input, or output control.

### Switch-on your device

Once you insert the batteries, the device will start up automatically, flash it with the app "sensor settings" and the NFC available to activativate it and modify its configuration. More information are available on this document.

### Device physical installation

The device must be attached with screws on its side. All the information are available on this datasheet.

# **Step 4: Monitor soil moisturelevel with WMW application**

Using the credentials you received through email, you can access to WMW on the following URL:

#### https://eu1.wmw-hub.com/en/login

Since you already have provisioned your device on ThingPark Community, the main step that should be left will be to create the device on WMW. Click on "Asset" and then "Asset list", an empty page should appear since you have no device added yet. Click on the big green **+**.

If you possess devices on multiple applications, you may have to click on "Soil Moisture" before "Asset List".



In order to fill your device creation fields, you need:

- A name that corresponds to your device: Elsys ELT-2
- Its Unique device identifier also called DevEUI
- Device type:Elsys ELT-2

You must select or create an asset type in order to create your device:

- For the brand, pick the brand of your device: Elsys
- For the type, enter the type of space you will monitor soil moisture level.
- You can add a picture or a description of this type of asset

Once you are done, click on "Save" and your device should appear on the corresponding asset list.

#### Add alarms to your device

You can pick its position manually since it does not return it by itself, and if everything goes well, the information of your device should appear as the payloads are transmitted.

If you want to add alarms to your device, return on the dashboard page and click on the arrow next to the device. Click on the small pen to edit your device, scroll down to find the "Rule" section, and click on the big green +. There you can add and edit your alarms to send emails or create webhooks depending on the measures your device transmits.



For example, if you want to configure alarms for soil moisture level thresholds in your field, select your Elsys ELT-2 device and add a rule with mails to send the alert to, or phones or simply webhooks. The soil moisture level thresholds are up to you to determine. You can also put alarms on the other properties of your device such as its battery.

#### Create asset rule

Name *		Notification interval *				
Alarm Waste Level		One time		~		
Email address(es) (separated by a comma)		Mobile number				
jean.alert@gmail.com						
Custom text						
Webhook		Webhook fields				
Basic authentication						
Rule type *	Operator *	Value expected	Logic			
Counter threshold ~	is greater than	- 24	~	+		
Save						

### Monitor your device's information

You will find the information displayed by the tracker on the tracker on the dashboard on the corresponding application.

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				Soil Moisture	Decide	e on 📄 Seern	¢ 🎄 🕈		•			
	Asset health							_				
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And if you want more extensive information, click on the arrow at the end of the line of the device, you will find the records of the soil moisture level.