



# SGL TurfPod Grass Monitoring Tool Instruction Manual

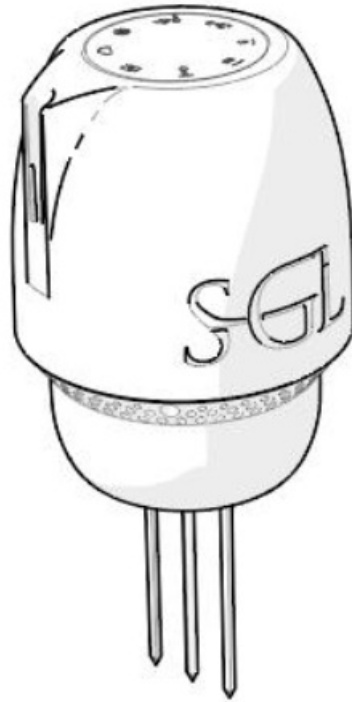
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## SGL TurfPod Grass Monitoring Tool



## Preface

Thank you for purchasing a TurfPod product from SGL. This manual contains all the necessary information for safe and correct installation, use and maintenance of a separate unit. Read this manual before you start using the product. Store this manual in an accessible place near the product for future reference.

This manual is intended for groundsmen and greenkeepers of grass sports playing surfaces who must use the unit as part of their job.

Read this manual carefully before using the unit and keep the manual at an accessible place close to the unit.

## Used symbols and signal words

This manual includes warnings and notices on safe and effective handling of the product. These notes and warnings are accompanied by the following symbols and signal words. Read them attentively!

- **DANGER** Indicates a hazardous situation that, if not avoided, will result in death or serious injury.
- **WARNING** Indicates a hazardous situation that, if not avoided, could result in death or serious injury.
- **CAUTION** Indicates a hazardous situation that, if not avoided, could result in minor or moderate injury.
- **NOTICE** Indicates information considered important, but not hazard-related (e.g. messages relating to property damage).

## Warranty

SGL warrants that any product delivered by and/or on behalf of SGL will function according to the specifications laid down by SGL for a period of twelve (12) months from the date of delivery. The warranty term shall not recommence in case of replacement and/or repair of the products concerned. The original warranty period shall in all cases remain intact.

## Limitation of liability

SGL accepts no liability for damage by:

- Failure to comply with these operating instructions
- Unintended use

- Unauthorised modifications
- Technical changes
- Use of spare parts not recommended by the manufacturer

## **Copyright**

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Violations will result in liability for damages. We reserve the right to further claims.

## **Introduction**

### **Product description**

The product requires a good signal to communicate with the SGL portal. The product uses 4GLTE<sup>m</sup> technology to communicate with SGL systems and does not require additional hardware or support. The product is compatible with the SGL customer portal products and requires a proper set up and configuration to operate correctly. Please read the entire manual before operating the product.

### **Intended use**

The product is intended to be used by groundsmen and greenkeepers of grass sports playing surfaces. The product is NOT intended to be used by:

- Persons aged under 18
- Persons with reduced physical, sensory or mental capacity
- Persons who are under the influence of alcohol or drugs

The product was designed to be easy to use. A single button interface allows the user to cycle through the different states of reporting, and also reset the device if needed. The product is intended to be used in combination with other SGL products. There are no user serviceable parts in the product (including the battery). Use of the product and the tools provided with it for any purpose other than those described in this manual absolves SGL B.V. of all responsibility.

## **Safety**

### **General safety precautions**

<b>WARNING</b>	<p>Never open the product to attempt to service. There are no user serviceable parts and doing so can damage the product, and will void the warranty.</p> <p>In case of questions or doubts contact SGL via phone +31 79 593 38 01 or email <a href="mailto:info@sglsystem.com">info@sglsystem.com</a>.</p>
<b>NOTICE</b>	<p>Read this manual carefully before using the product.</p> <p>Keep the manual at an accessible place close to the product.</p> <p>In case of questions or doubts contact SGL via phone +31 79 593 38 01 or email <a href="mailto:info@sglsystem.com">info@sglsystem.com</a>.</p>

## Transport and Storage

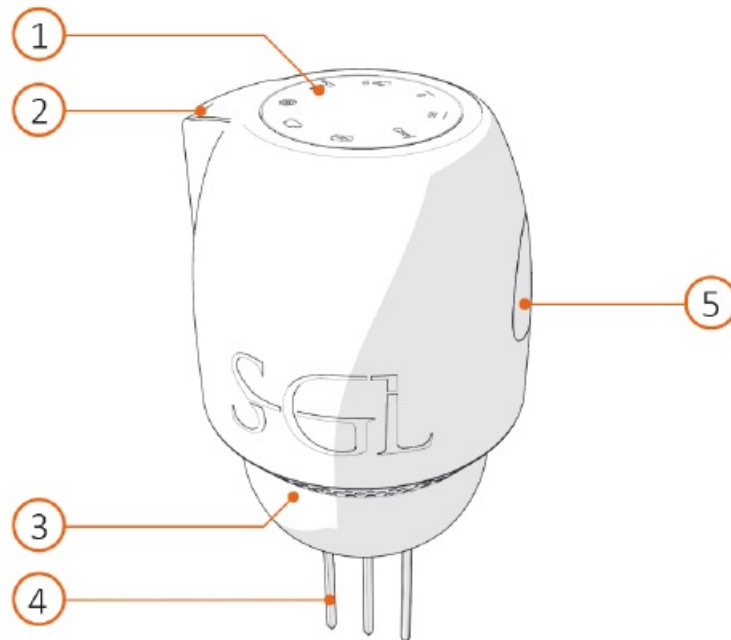
<b>NOTICE</b>	<p>Make sure that the product is completely and correctly stored before transport.</p> <p>To ensure optimal battery life and performance, never leave the product for an extended period of time on a dead battery!</p>
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## Operation

<b>WARNING</b>	Soil pins are extremely sharp and should be handled with care.
<b>CAUTION</b>	<p>Never use a tool, your foot or other device to press the product into the pitch, simply press with your hand. If you encounter resistance remove the TurfPod and move a small distance and retry.</p> <p>Do not force the product into overly hard pitch/ground, this may damage the sensor pins.</p> <p>Do not submerge the product into water, always ensure that the ventilation holes on the bottom are facing down towards the pitch when installed.</p>
<b>NOTICE</b>	<p>Always install the product in an upright position as level as possible to insure proper light readings.</p> <p>GPS signals take up to 60 minutes to reach optimal accuracy, we advise that once installed you do not move the product too frequently. This will cause less accurate location reporting and also impact battery life.</p> <p>Never leave the product in a fixed location for more than 24 hours, if outdoor temperatures are over 20 degrees they should be moved &gt;10cm every 12 hours or so to maintain optimal pitch conditions and not damage the sample area.</p> <p>Do not tamper with the product's SIM card for any reason.</p> <p>Make sure the flag pole is facing away from the sun to insure no shadows can impact the PAR readings.</p>

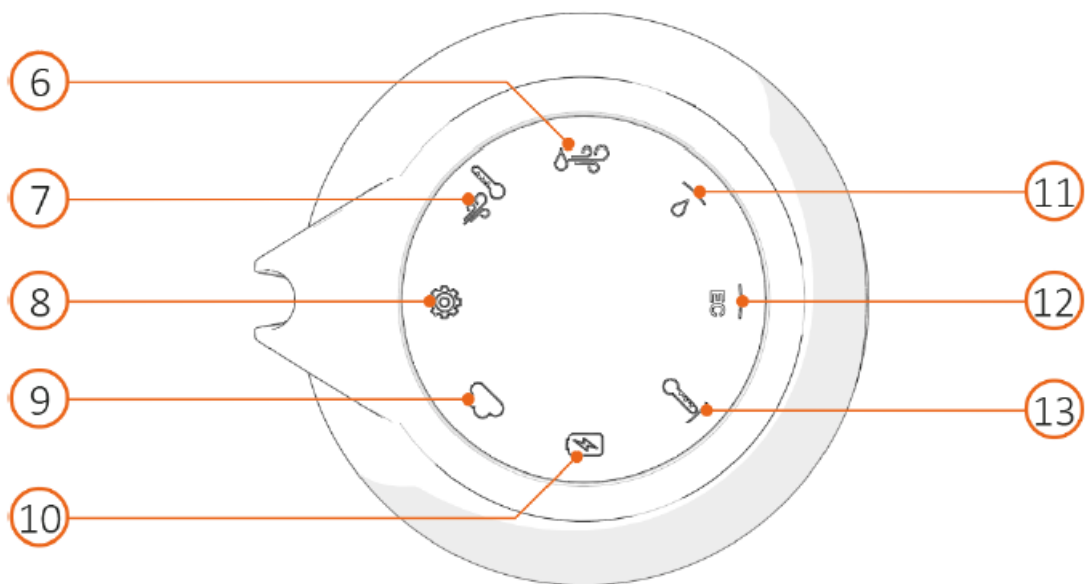
## Product overview

### Main parts



- 1. LED indicators
- 2. Flag slot
- 3. Wireless charging surface
- 4. Soil pins
- 5. Control button

#### **Control Indicators**



- 6. Relative Humidity Sensor
- 7. Air Temperature Sensor
- 8. PAR sensor
- 9. Radio Indicator
- 10. Battery Indicator
- 11. Soil Moisture Sensor

12. Soil EC (pore) Sensor
13. Soil Temperature Sensor

### **Included equipment**

Your TurfPod comes with the following items:

- Charging Station
- USB Cable
- Flag

### **Optional Equipment**

There are additional items available for purchase, to help make your TurfPod products more flexible to fit your needs.

**Note:** These parts may or may not be released or available at the time of this printing.

- Wall Mounting Kit
- TurfPod Carrying Kit
- TurfPod Carrying Kit with integrated changing system (6, ??, ?? TurfPod options)
- Replacement Desktop Charger
- Replacement Charging Station (for kits)
- Replacement Carrying Dock (for kits)

### **Specifications**

<b>Dimensions</b>	189 mm (H) x 87 mm (Dia) <i>(Measurements w/o flag installed)</i> 119 mm (H) (Body height, above the pitch when installed)
<b>Weight</b>	320g <i>(w/o flag installed)</i>
<b>IP Rating</b>	IP33 – Suitable for outdoor use in rain and irrigation environments
<b>Display</b>	LED multi-status display (8 LEDs)
<b>Interface</b>	Single button interface
<b>Power system</b>	Internal battery (Not user serviceable)
<b>Battery life</b>	~60 days (Based on full charge and proper usage)
<b>Charging</b>	Wireless charging (Using the SGL TurfPod Charging Station)
<b>Data sampling</b>	5 minutes (Day/Night)
<b>Communication</b>	4G LTE-M
<b>Auto location</b>	GPS (+/- 5m with open sky and the minimum required satellite locks)
<b>Built-in accelerometer</b>	Event monitoring to improve performance and extend battery life
<b>Low power mode</b>	Reduces transmission intervals on low power and at night to extend battery life
<b>Transport mode</b>	Turns off 4G radio, GPS, and sensors to comply with various transport requirements

#### Agronomical specifications

Parameter	Range	Accuracy	Resolution	Units
PAR	0-2500	5%	1.0	uMol/m2/s
Air temperature	-10 to 70	+/- 0.2	0.1	Celsius
Relative humidity	10-90 (0-10 , 90-100)	+/- 2 (Less than +/- 3)	0.1	%

Soil temperature	0 to 30	+/- 0.5	0.1	Celsius
Soil moisture	0 to 100	+/- 2.5	1	%
Soil EC (Pore)	0 to 5.0	5%	0.1	uS/cm



## Operation

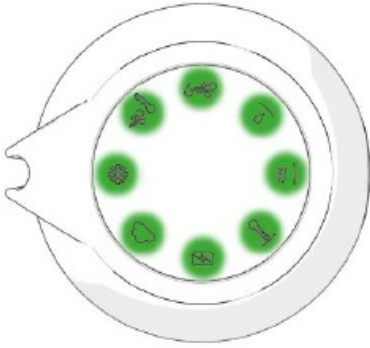
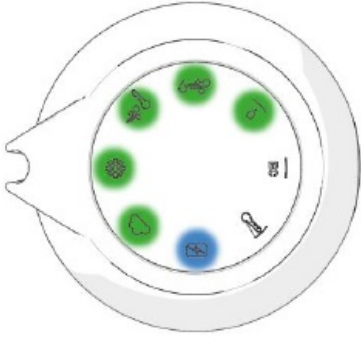
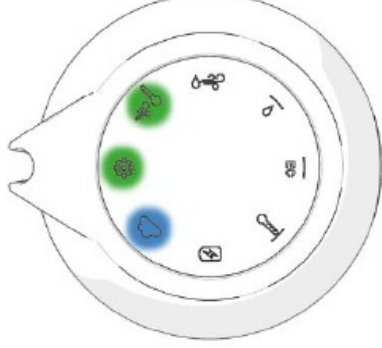
### Installing the product

<b>WARNING</b>	Soil pins are extremely sharp and should be handled with care.
<b>CAUTION</b>	<p>Never use a tool, your foot or other device to press the product into the pitch, simply press with your hand. If you encounter resistance pull back the product and move a small distance and retry.</p> <p>Do not force the product into overly hard pitch/ground, this may damage the sensor pins.</p> <p>Do not submerge the product into water, always ensure that the ventilation holes on the bottom are facing down towards the pitch when installed.</p>
<b>NOTICE</b>	<p>Follow all installation and usage guidelines to ensure proper operation and accurate data. Always install as straight upright as possible.</p> <p>GPS signals take up to 60 minutes to reach optimal accuracy, we advise that once installed you do not move the product frequently. This will cause less accurate location reporting and also impact battery life.</p> <p>Never leave the product in a fixed location for more than 24 hours, if outdoor temperatures are over 20 degrees they should be moved &gt;10cm every 12 hours or so to maintain optimal pitch conditions and not damage the sample area.</p> <p>Do not tamper with the product's SIM card for any reason.</p> <p>Make sure the flag pole is facing away from the sun to ensure no shadows can impact the PAR readings.</p>

1. Place the product completely vertical. This will ensure proper PAR
2. Press the product with your hand into the
3. Move the product at least 25cm/1ft every 24 hours to minimize any impact of the pitch quality under the product.
4. Place the locating flag in the flag slot (optional).

**Note:** Make sure the flag pole is facing away from the sun to ensure no shadows can impact the PAR readings.

### User interface

		
Press	Double press	Triple press

**Note:** In the normal state, all LED indicator lights should be off.

- Press the button to show the status of all the

After three seconds the indicator lights switch off, the product returns to the normal function.

**Note:** A green light indicates a good response. A red light indicates an error.

- Double press the button to report the battery

After three seconds the indicator lights switch off, the product returns to the normal function.


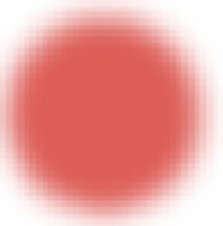
**Note:** The blue light indicates what parameter is being reported. The remaining LED lights indicate the general battery life.



- Triple press the button to report the radio

After three seconds the indicator lights switch off, the product returns to the normal function.

**Note:** These status reports are a good indicator of the product state, but more detailed information can be viewed on your customer portal.

### Indicator light colour explanations

	<ul style="list-style-type: none"> <li>• A green indicator light indicates what parameter, or the level of the battery or radio signal is in a good working order.</li> </ul>
	<ul style="list-style-type: none"> <li>• A red indicator light indicates an error.</li> <li>• A blinking red indicator light on the battery icon indicates a low battery.</li> </ul>

	<ul style="list-style-type: none"> <li>· A blue indicator light indicates what parameter is being reported.</li> <li>· A blue indicator light at the battery will pulse slowly during charging.</li> </ul>
	<ul style="list-style-type: none"> <li>· A flashing yellow indicator light on the cloud or radio icon indicates that the TurfPod is not connected to the cloud.</li> </ul>

## Resetting the product

**Note:** Only reset the product if it is instructed by someone of the SGL Service Team, or by the Troubleshooting guide.

**Note:** A reset clears the memory of the product. This will cause a loss of TurfPod data and may reduce the service teams ability to troubleshoot your issues.

1. Press and hold the control button until all indicators start to blink red. A count down will
2. Continue to hold the control button until all indicators, then release.

## Charging

The product is designed to charge via a wireless charging dock provided with your purchase. Place the product on the charging dock.

- The battery indicator light slowly pulses blue to indicate that the product is charging.
- The battery indicator light will become solid green to indicate that the product is fully charged.

**Note:** It is not required to fully charge the product to use it. The product can be placed in the charging dock when removed from the pitch during a match or treatment.

**Note:** The product is designed to last approximately 2 months on a single full charge. Poor radio connection and GPS signal quality can reduce battery life.

**Note:** The battery in the product is not user serviceable. Never attempt to open the product as the components are extremely sensitive.

## Transport and Storage

<b>NOTICE</b>	<p>Make sure that the unit is completely and correctly stored before transport.</p> <p>To ensure optimal battery life and performance, always fully recharge the product when the low battery signal comes on. Never leave the product for an extended period of time on a dead battery!</p>
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## Maintenance

If you are unable to solve issues, please contact SGL via phone +31 79 593 38 01, email [service@sglsystem.com](mailto:service@sglsystem.com) or create a service request.

Never attempt to service the product. Doing so will void all warranty/service options and could cause you to incur additional costs for damage.

### **Cleaning**

Clean the product regularly with a damp cloth. Never use running water directly on the TurfPod.

Do not use detergents, abrasives or other aggressive chemical cleaning agents when cleaning the product

## **Troubleshooting**

- No lights come on when you press the button.

The battery is probably dead.

Place the product on the charging dock for an extended period of time until the battery indicator slowly pulses blue.

- The radio/cloud indicator flashes yellow.

There is no radio connection to the cloud or cellular service. If you are in a closed space take the product to an open area and give it up to 30 minutes to connect.

- The battery indicator flashes red.

Place the product on the charging dock to recharge the battery.

### **Disposal**

The product should be dismantled safely and in an environmentally friendly way, in line with the rules defined by the national authorities.

### **Disclaimer**

Despite the care and attention devoted to putting this manual together, it is possible that the information presented may be incorrect or incomplete. SGL B.V. reserves the right to make changes to the manual without notification beforehand.

## **FCC WARNING**

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.


**NOTE:** This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This

equipment should be installed and operated with minimum distance 20cm between the radiator and your body. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

**Documents / Resources**

 <small>TurfPod V1, 2A2I5-V1, 2A2I5V1 TurfPod Grass Monitoring Tool, Grass Monitoring Tool, Monitoring Tool</small>	<p><a href="#">SGL TurfPod Grass Monitoring Tool</a> [pdf] Instruction Manual V1, 2A2I5-V1, 2A2I5V1, TurfPod Grass Monitoring Tool, Grass Monitoring Tool, Monitoring Tool</p>
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