

PlantCare Plantomat® PRO

The intelligent, long-term watering system.



Instructions for use



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1. Safety pointers

- Please read these instructions carefully and note the pointers given. Use these instructions to familiarize yourself with the Plantomat® PRO, its correct use as well as the safety instructions.
- Ensure that only watertight plant containers are used for indoor applications and use a protective underlay if necessary.



Important: Before filling the water reservoir, make sure that the Plantomat® PRO has been correctly installed and switched on. This is the only way that the level sensor can warn against overfilling the water reservoir.

- Use only original PlantCare accessories.
- If using an optional original power adapter, please note the following points:
 - Inspect all accessories for any damage. A damaged power adapter must not be used and needs replacing.
 - The Plantomat® PRO must only be installed while unplugged.
 - Power cable extensions must be located where there is no risk of tripping over them.
 - Maintenance and plant care work should only be carried out after disconnecting your Plantomat® PRO from the power supply.
- The Plantomat® PRO should only be repaired or modified by qualified specialists.
- If the Plantomat® PRO is damaged or fails to work properly, it must be switched off.

Proper use:

The Plantomat® PRO is intended for the automatic irrigation of indoor and outdoor plants. It must only be used for water or for water with fertiliser.

2. Scope of supply/optional accessories

Scope of supply

Please check the contents of the pack for completeness.

- Plantomat® PRO with attached water pump and level sensor
- Moisture sensor
- Pump tube (1 m)
- Perforated watering tube
- Plantomat® PRO non-slip guide tube (anti-slip protection packed separately)
- Servicing tube with cap and anti-slip protection (anti-slip protection packed separately)
- 2 cable ties for pump power cable
- Replacement tip with felt for moisture sensor

Optional accessories

- Relay box to control solenoid valves by means of isolated switch
- Extension cable for moisture sensor (5 m)
- Photovoltaic cell
- Power adapter
- GSM modem for water and battery alarm transmission using SMS
- External water pump with Plantomat connection to refill the water reservoir
- Data export cable and software to export the logbook

3. Operating principle

Plantomat® PRO measures moisture levels in the plant substrate at regular intervals. As soon as the minimum moisture level set by the user is reached, water is pumped up from the reservoir and distributed over the substrate by means of perforated watering tube.

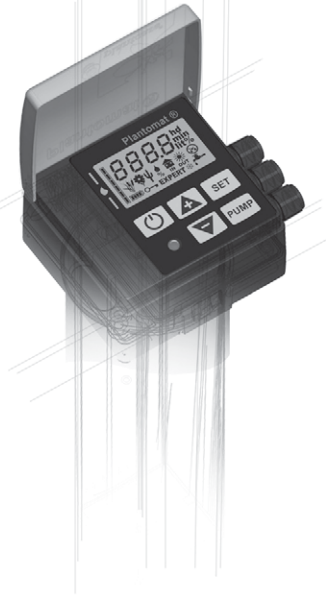
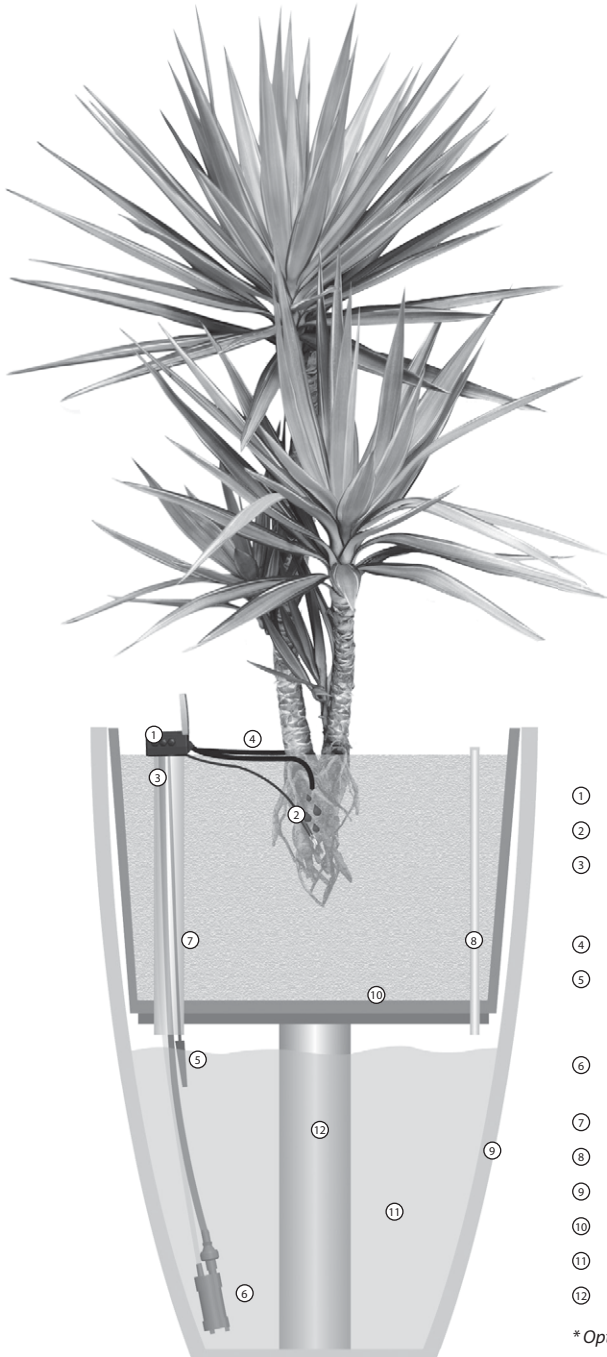
Plantomat® PRO is easy to use and is ready to use only a few seconds after installation in the plant container. The factory settings in standard mode thus assist less experienced users.

EXPERT mode permits full system flexibility. Fine adjustments can be made to moisture settings here and the desired time interval between two watering cycles can also be freely selected. In addition, measurement of the current substrate moisture level can be made and this value set for subsequent watering sessions (see also section 7.4.3 "Magic Finger").



Initially, it is recommended that you observe the plants and adjust the settings as necessary.

3.1 General overview: Container and Plantomat® PRO

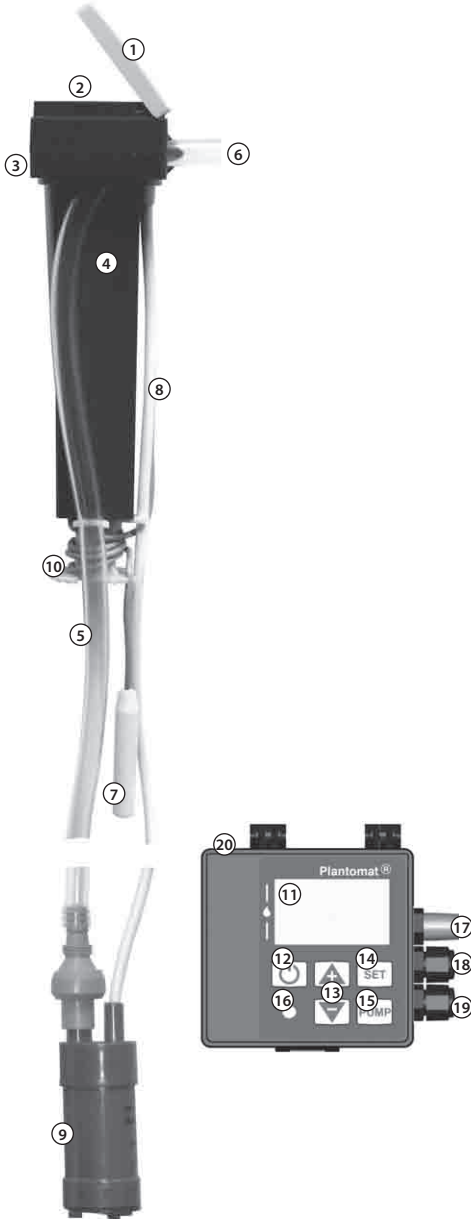


- ① **Electronics**
- ② **Moisture sensor**
- ③ **Battery compartment**
2 x 6 AA batteries. A photovoltaic cell or a power adapter are optional alternatives*.
- ④ **Watering tube**
- ⑤ **Level sensor**
Prevents the water reservoir from being overfilled
- ⑥ **Water pump**
Solenoid valve connection as an option*
- ⑦ **Plantomat® PRO guide tube**
- ⑧ **Servicing tube**
- ⑨ **Watertight outer container**
- ⑩ **Plant insert**
- ⑪ **Water reservoir**
- ⑫ **Supporting element if required**

* *Optional accessories*

4. Plantomat® PRO configuration and controls

4.1 Equipment overview














- ① Protective cover
- ② Electronics
- ③ Opening for battery compartment
- ④ Battery compartment
- ⑤ Pump tubing
- ⑥ Watering tube connection
- ⑦ Level sensor
Prevents the water reservoir from being overfilled
- ⑧ Water pump power cable
- ⑨ Water pump
- ⑩ Level sensor cable

- ⑪ Display
- ⑫ ON/OFF key
- ⑬ Selector keys
- ⑭ SET/OK key
- ⑮ Manual pump switch on
- ⑯ Alarm LED
- ⑰ Moisture sensor connection
- ⑱ GSM modem (SMS) or data export cable connection
- ⑲ Photovoltaic cell, power adapter or external refill pump connection
- ⑳ Watering tube outlet

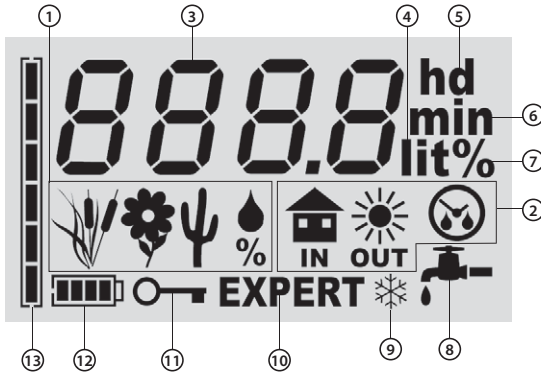
(Illustrations may differ from original product.)

4.2 Key functions



Basic functions	Key	Action
Switching on		Press briefly
Switching off		Press until display goes out
Select standard mode		Appears automatically when first switched on
Select or exit EXPERT mode		Keep pressing until «EXPERT» appears in the display or disappears to exit that mode
Programming		Press briefly
Select a function/increase a setting value		Press several times until the desired symbol or figure appears in the display (confirm with SET)
Reduce a setting value		Press several times until the desired symbol or figure appears in the display (confirm with SET)
Confirming a function		Press briefly
Keypad lock/keypad unlock		Keep pressing until the key symbol appears or disappears in the display
Switch on the water pump manually		Keep pressing for as long as needed
Acknowledge alarms	 or 	Press briefly

4.3 Display symbols



Setting the moisture level

- ① Continuously moisture-loving plant
- ① Moderately moisture-loving plant
- ① Moderately moisture- to dry-loving plant
- ① Set moisture level manually (EXPERT mode)

Setting the watering cycle

- ② Watering cycle, indoors: every 5 days
- ② Watering cycle, outdoors: every 24 hours
- ② Set watering cycle manually (EXPERT mode)

Input or display panel

- ③ **WRIT** Plantamat® PRO is now measuring the moisture level
- ③ **FULL** The water has now reached the level sensor. Stop filling immediately!
- ③ **OK** Programming completed
- ④ **lit** Litres (watering amount per watering cycle)

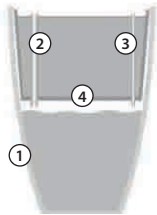
- ⑤ **h/d** h/d for hours/days (setting for the watering cycle)
- ⑥ **min** Watering time in minutes (only with solenoid valve operation)
- ⑦ **%** Moisture level in %.
- ⑧ Water alarm: water reservoir needs refilling!
- ⑨ Frost alarm: substrate temperature is below 3°C.
- ⑩ **EXPERT** «EXPERT» programming mode
- ⑪ Keypad locked
- ⑫ Battery alarm: please replace the batteries
- ⑬ Moisture display: current moisture level in the substrate
6 bars = substrate is very moist
1 bar = substrate is fairly dry

5. Select and prepare the plant container

5.1 Container options

Installing a Plantomat® PRO is very easy and possible in almost all the plant containers available on the market. The only adjustment to be made is to drill two holes in the plant insert using standard tools. These holes are needed to insert the Plantomat® PRO guide tube as well as the servicing tube.

Various container options are possible for indoor or outdoor use:



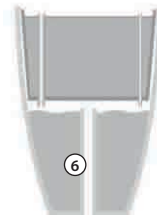
Indoor - option 1

Leakproof container with integral plant insert.



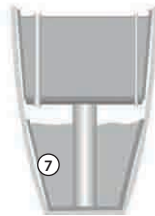
Indoor - option 2

Leakproof container with separate plant insert and supporting elements.



Outdoor - option 1

Leakproof container with integral plant insert. An additional overflow tube, which must be mounted leakproof, drains off rainwater.



Outdoor - option 2

Container is not leakproof. A separate plant insert and supporting element are used. A leakproof inner pot is used as the water reservoir.

- ① Container
- ② Plantomat® guide tube
- ③ Servicing tube
- ④ Plant insert
- ⑤ Supporting element if required
- ⑥ Overflow tube
- ⑦ Inner pot



A single Plantomat® PRO can also water several plants on a balcony or terrace simultaneously. This requires a water reservoir as well as the corresponding watering tubing/valves and a power connection for the best results. Further information on this is available at www.plantcare.ch.

5.2 Preparing the container

Suggested plant inserts and supporting elements

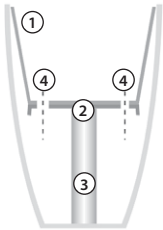


Plant inserts

If your plant container does not have an integral plant insert, you can use a soft plant insert available from garden centres.

Supporting elements for plant inserts

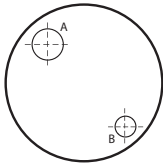
If using a separate, soft plant insert, it must be supported with a supporting element. An inexpensive solution for a supporting element is given below. The individual elements can be obtained from any garden centre or DIY store.



- ① Soft plant insert
- ② Flower-pot saucer
- ③ Standard plastic tube larger than for example $\varnothing 110\text{mm}$, depending on the size of the container and the weight of your planted plant insert. The length of the standard tube can be adjusted to fit.
- ④ Holes drilled in the plant insert and saucer for the Plantomat and servicing tube (q.v. below)

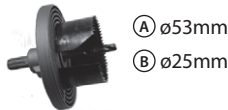
Drilling holes in the plant insert:

- Ⓐ Drilling a hole for the Plantomat® PRO guide tube
- Ⓑ Drilling a hole for the servicing tube



For soft plant inserts: Drill 2-3 holes with a diameter of approx. 2 mm so that excess water can drain away. Cover the holes with standard non-woven fabric.

Standard hole saw
for hard plant insert or saucer



Standard punch
for soft plant insert



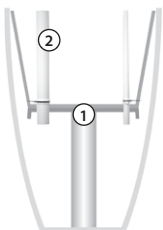
Preparing the tubes

Q.v. separate installation information enclosed for the Plantomat's guide & servicing tubes.



Fitting the plant insert and tubes

- ① Insert the plant insert and, if required, the supporting element into the outer container
- ② Fit the guide and servicing tubes prepared according to the separate installation information through the holes drilled in the plant insert



Note: The point where the tubes enter the plant insert does not require sealing. Excess water or rainwater can thus drain away into the reservoir. Both of the tubes supplied are standard sizes. If these are too short for your plant insert, you can obtain longer tubes in any hardware store.

6. Installing your Plantomat® PRO

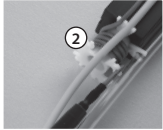
6.1 Preparing your Plantomat® PRO

Adjust your Plantomat® PRO to the height of your container:



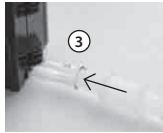
①

① Clamp the cable and tubing to the shaft.



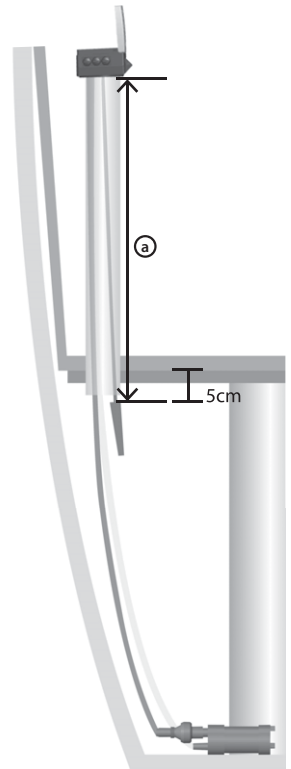
②

② Wind the level sensor cable around the shaft to the right length (a).



③

③ Connect the perforated watering tube to the pump tubing.



6.2 Connecting the moisture sensor:

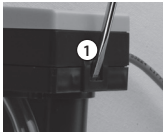


Insert the moisture sensor connector into the corresponding socket.

6.3 Power supply

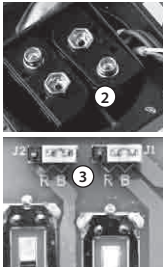


Important: When opening the battery compartment, avoid getting any earth or dirt in the electronics casing. Clean the surface of the seal before closing.



Battery operation

Note: Ensure that the moisture sensor is connected (q.v. section 6.2).



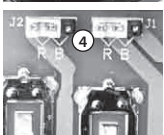
- ① Open the snap-fitting top carefully with a flat screwdriver.
- ② Remove the battery holder and insert 12 AA batteries.
- ③ Ensure that both connectors are inserted at **position B** (the first contact pin on the left must be visible).



Operation with photovoltaic cell and rechargeable batteries

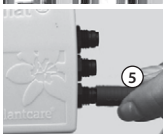


- ① Open the snap-fitting top carefully with a flat screwdriver..
- ② Remove the battery holder and insert a maximum of 6 rechargeable AA batteries.
- ④ Ensure that both connectors are inserted at **position R** (the first contact pin on the right must be visible).
- ⑤ Insert the photovoltaic connector into the corresponding connection socket.



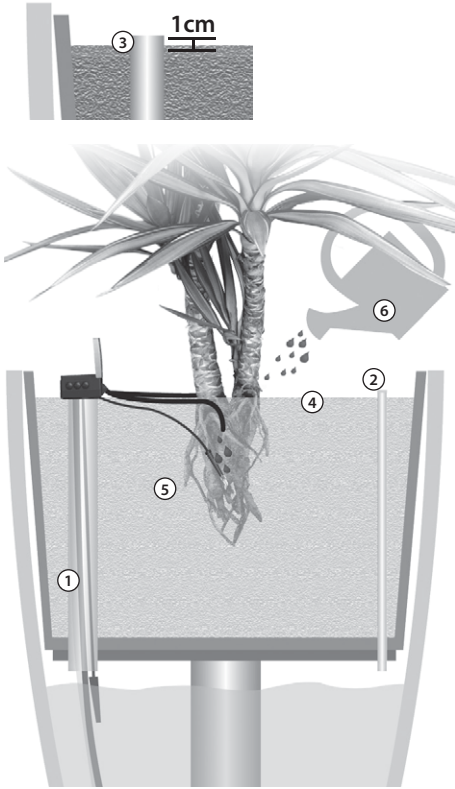
Operation with power adapter and rechargeable batteries

Proceed as in «Operation with photovoltaic cell».



Important: When a photovoltaic cell or a power adapter is used, no more than 6 rechargeable batteries may be fitted.

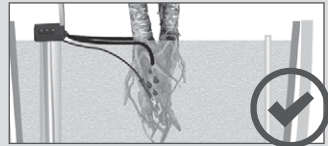
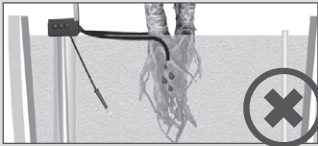
6.4 Inserting your Plantomat® PRO and planting the container



- ① Insert your Plantomat® PRO into the guide tube until it sits properly. Avoid any kinking of the watering tubing.
- ② Close off the servicing tube with the stopper supplied.
- ③ Add the substrate, leaving enough room for the root ball. Insert the plant as usual and top up with the remaining substrate. The guide and servicing tubes must protrude above the substrate by approx. 1 cm.
- ④ Insert the perforated end of the watering tube approx. 4-6 cm into the root ball.
- ⑤ Insert the moisture sensor to a depth of around 12 cm directly below the watering tube. If the moisture sensor cable is not long enough, a sensor extension cable can be used.
- ⑥ Water the substrate thoroughly and copiously.



Important: The sensor tip must be positioned in the vicinity of the root ball and directly below the watering tube. It must be completely surrounded on all sides by substrate.

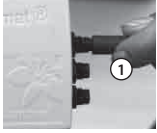


Hydroponics application: Position the moisture sensor as deep as possible in the plant insert and punch additional holes in the watering tube for a better wetting of the expanded clay.



Tip: Use a standard, stainless steel wood screw (3.5 x 15 mm) to secure your Plantomat® PRO to the guide tube and to protect it against theft.

7. Operation



7.1 Switching on/off

- ① First connect the moisture sensor supplied.



- ② Switching on: Press the ON/OFF key briefly.
Switching off: Press the ON/OFF key for 1 second.



7.2 Filling the water reservoir

- ① Switch on your Plantomat® PRO to activate the level sensor.
- ② Fill the water reservoir using the servicing tube.
Keep the water pressure low when refilling with a garden hose.



Note: Always pay attention to the display!

As soon as the water reservoir is full, «FULL» appears in the display and the LED alarm starts flashing. Stop filling immediately.



Important: Only refill the water reservoir when the water level falls below the level sensor. Check the water level with a ruler if necessary.



- ③ To test whether the watering tube has been laid correctly, manually activate the **PUMP** key.

Optional accessories:

As an alternative to manual refilling, an «External refill pump» can be used.





7.3 Settings – Overview

Plantomat PRO enables three parameters to be set that are important for the correct watering of plants: moisture level, watering cycle and watering amount.



Tip: Please note that, besides correct watering, additional factors such as location, lighting, fertilizer, repotting in larger containers at the right time, etc. will all influence how well your plant thrives. Get advice from an expert on this.




7.3.1 Possible moisture settings

Type of plant	Symbol	Watering takes place
Always moisture-loving plant		as soon as the relative remaining moisture in the substrate falls below 50%
Moderately moisture-loving plant		as soon as the relative remaining moisture in the substrate falls below 35%
Moderately moisture- to dry-loving plant		as soon as the relative remaining moisture in the substrate falls below 20%
Setting the moisture level manually		as soon as the relative remaining moisture in the substrate falls below the moisture level set (EXPERT mode)



Important: The ideal moisture level is heavily dependent on the type of plant and substrate. You should therefore observe your plant and adjust the moisture level setting for watering.

7.3.2 Possible watering cycle settings

Watering cycle	Symbol	Explanation
Every 5 days		Ideal for indoor plants (Plants in a roofed area and not exposed to extreme heat)
Every 12 hours		Ideal for outdoor plants (Plants in the open air may be exposed to extreme heat)
User-defined watering cycle		In EXPERT mode, the watering cycle can be set manually to between 6 hours and 99 days

7.3.3 Watering amount

Plantomat® PRO waters the amount set by the user. However, this amount is automatically adjusted to the plant's actual water requirements by your Plantomat® PRO if:

- the amount has been set too high or too low by the user
- seasonal temperature fluctuations affect the plant's water requirements
- the plant is growing or has been cut back

7.4 Programming

7.4.1 Standard mode

You are in standard mode if «EXPERT» is not showing on the display.



1. Setting the moisture level for watering

- SET key
- Select with PLUS key
- Confirm with SET key



2. Selecting the watering cycle

- Select with PLUS key
- Confirm with SET key

2.0 lit

3. Setting the watering amount

- PLUS or MINUS key
- Confirm with SET key

7.4.2 EXPERT mode

You are in EXPERT mode if «EXPERT» is showing on the display.

In addition to standard mode, EXPERT mode allows the moisture level and watering cycle to be set manually. You can thus be even more specific in meeting your plant's requirements. The additional «Magic Finger» function (q.v. section 7.4.3) is also available in EXPERT mode.

1. Select EXPERT mode

- Keep SET key depressed until «EXPERT» appears



2. Setting the moisture level for watering

- SET key
- Select with PLUS key
- Confirm with SET key

if ☼ is selected:

- Set the moisture level with PLUS or MINUS key
- Confirm with SET key



3. Selecting the watering cycle

- Select with PLUS key
- Confirm with SET key

if ☹ is selected:

- Set the watering cycle with PLUS or MINUS key
- Confirm with SET key

2.0 lit
EXPERT








4. Setting the watering amount

- PLUS or MINUS key
- Confirm with SET key

7.4.3 Additional functions in EXPERT mode

Function	Keys	Comments
«Magic Finger» function: Measures current substrate moisture and automatically uses this measurement as the moisture level for irrigation.	Keep PLUS key depressed until WRT appears	If you feel that your Plantomat® PRO should be watering at the current plant and substrate situation, you can start up the «Magic Finger» function. Your Plantomat® PRO measures the moisture level (duration approx. 4 minutes). The moisture level measured is automatically used for future watering requirements
Measuring current substrate moisture	Press PLUS key twice briefly until WRT appears	Your Plantomat® PRO will measure the moisture level. After approx. 4 minutes, the current moisture level appears for around 30 seconds.
Changing the measuring interval of the moisture sensor	<p>Hold down MINUS and SET keys simultaneously for approx. 2 seconds. EXPERT flashes</p> <p>Press PLUS key once briefly.</p> <p>Set the desired measuring interval using PLUS or MINUS keys.</p> <p>Confirm with SET key</p>	The measuring interval is set at 2 hours by the manufacturer.
Switching from water pump to solenoid function	<p>Hold down MINUS and SET keys simultaneously for approx. 2 seconds. «EXPERT»flashes</p> <p>Press PLUS key briefly three times.</p> <p>Use PLUS or MINUS keys to switch from «IP 1» to «IP 0».</p> <p>Confirm with SET key</p>	<p>«IP 0» means that the pump is switched off and that watering is being handled by an external solenoid valve. The watering period is now displayed in minutes.</p> <p>Switching to the solenoid function will deactivate the level sensor.</p>
Data export		Your Plantomat® PRO will record all activities during the previous 6 months. This data can be exported and analysed using the optional accessory data export cable. More information on this is available in the data export cable operating instructions or at www.plantcare.ch .

7.5 Alarm displays

Display	Alarm	What you need to do	Alarm reset	Section
 + LED flashes	Water alarm	Fill up the water reservoir	 or 	7.2
FULL + LED flashes	Level sensor	Stop filling up the water reservoir	 or 	7.2
 + LED flashes	Battery alarm	Replace all batteries		6.3
	Frost alarm	Substrate temperature is below 3°C. Switch off your Plantomat® PRO if temperatures remain below 3°C for a longer period of time.		10
ERR...	ERROR	Q.v. «Troubleshooting»		8

8. Troubleshooting

Your Plantomat® PRO will continue to water your plant despite ERROR messages according to the most recent settings except for ERR 3 and ERR 5.

Error message	Possible cause	Remedy
ERR 1 (Moisture sensor)	Moisture sensor disconnected or incorrectly connected.	Connect the moisture sensor correctly.
ERR 2 (Level sensor)	Level sensor fails to operate.	Faulty cable connection. Contact your vendor.
ERR 3 (Water pump)	The water pump fails to operate.	Faulty cable connection. Contact your vendor.
ERR 4 (Moisture sensor)	The moisture sensor is faulty.	Replace the moisture sensor.
ERR 5 (Water pump)	The water pump is blocked.	Remove your Plantomat® PRO from the plant container and clean the water pump.
ERR 6 (The moisture sensor measures excessively dry substrate despite watering.)	The moisture sensor is not located in the watering area.	Position the moisture sensor in the watering area. (q.v. section 6.4)
	The water supply has been interrupted.	Check the pump tubing and the watering tube for kinks. In the event of solenoid operation, check the water supply.
	Watering amount too low.	Increase the watering amount.

Problem	Possible cause	Remedy
Watering cuts in although the substrate is moist.	The moisture sensor is not located in the watering area.	Position the moisture sensor in the watering area. (q.v. section 6.4)
	Moisture level too high.	Reduce the moisture level.
The watering fails to cut in although it is dry.	The moisture sensor is positioned too deep in the substrate.	Position the moisture sensor in the correct place. (q.v. section 6.4).
	Moisture level too low.	Increase the moisture level.
FULL is indicated although the water reservoir has not been refilled.	The integral level sensor reacts very sensitively to temperature fluctuations in the water reservoir.	No correction is required as the flashing display FULL and the alarm LED will go out after a certain time.

9. Maintenance/care

Your Plantomat® PRO operates maintenance-free apart from changing flat batteries as well as the sensor felt.

Cleaning your Plantomat® PRO:

Corrosive or abrasive cleaning agents must not be used. Clean the keypad with a damp cloth (do not use any solvents). Your Plantomat® PRO is splashproof but not waterproof and therefore must not be cleaned under running water or immersed in water.

Cleaning the sensor tip/replacing the sensor felt:

If the moisture sensor has been removed and refitted several times, the sensor tip should be cleaned with clean water. Replace the felt if damaged and after 2 years' use (unscrew the sensor tip).

Cleaning the water reservoir:

Please avoid any contamination of the water reservoir. This may block the water pump and result in your Plantomat® PRO malfunctioning. We therefore recommend checking the water reservoir periodically for any dirt and cleaning if necessary.

10. Putting out of operation

Storage/winter storage

- Your Plantomat® PRO must not be operated when temperatures are consistently below 3°C.
- Emptying the water reservoir: the water can be pumped out of the reservoir by pressing the PUMP key. To do this, disconnect the perforated watering tube from the pump tubing (see section 6.1[Ⓢ]) and connect a suitable piece of tubing.
- Remove the batteries and store your Plantomat® PRO in a dry and frostfree location.

11. Disposal/environmental protection



Do not dispose of the equipment or the batteries in your normal household waste at the end of their service life. They should be returned to an official collection point for recycling. In this way, you will help to protect the environment.

12. Technical specifications

Moisture sensor cord:	0.5 m
Level sensor cord:	0.6 m
Pump cord:	1.0 m
Pump tubing:	1.0 m
Voltage supply:	9 VDC / max. 12 VDC
Temperature range:	3 - 60 °C
Batteries:	6 or 12x AA batteries
Service life of the batteries:	Dependent on the size of the plant and its location
Operation with a power adapter:	Only with 6 rechargeable AA batteries and an original PlantCare power adapter 90 - 264V
Operation using a photovoltaic cell:	Only with 6 rechargeable AA batteries and an original PlantCare photovoltaic cell.
Plantomat® PRO dimensions:	ca. 65 x 70 x 200 mm

13. Appendix

Ⓒ Ⓔ Declaration of conformity:

As the distributor of the equipment described in these instructions for use, PlantCare Inc. confirms its compliance with the requirements of EU directives 2004/108/EC.

Guarantee:

Your local representative guarantees this product for 2 years (from the date of purchase). This guarantee refers to all essential defects in the equipment that are demonstrably attributable to faulty material or manufacturing. Defective equipment will be replaced at our discretion either by a replacement unit in perfect working order or by the repair free of charge of the equipment after its return conditional on fulfilment of the following prerequisites:

- The equipment has been operated correctly and in accordance with the recommendations in the operating instructions.
- No attempt has been made either by the buyers or a third party to repair the equipment.
- In the event of parts being replaced, original PlantCare parts or parts released by us have been used. This also applies to additional parts and accessories.

The equipment is designed for private use as well as use in offices. The guarantee is invalid in the event of industrial as well as inappropriate use (q.v. 1. Safety pointers).

Disclaimer:

No liability can be accepted for consequential damage caused by faulty operation or by a malfunction of the equipment.

Spare parts/after-sales service

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