

# TERRA SMART WASTE BIN



## Installation manual

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a. Bolts necessary for Terra assembly (included in the packaging)

<b>No.</b>	<b>Bolts and nuts</b>	<b>Qt.</b>
1	Fischer bolt anchor FBN    8	4
2	M8 hexagon nut (DIN934)	4
3	A8 Washer (DIN125)	4
4	ID10.2, S2.5 disc spring (DIN2903)	4

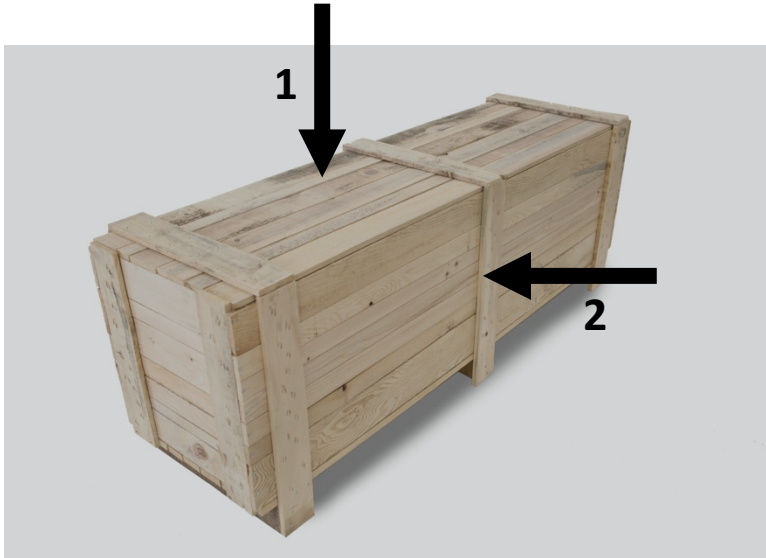
b. Terra installation tools

<b>Tools</b>	<b>Quantity</b>	<b>Size</b>
Combination wrench	1	13
Phillips head screwdriver	1	1
Wire strippers	1	-



# 1. Unpacking the bin

- 1) Terra smart waste bin is transported in suitable wooden packaging (crate) in order to remain protected during transport. When the bin is delivered, please visually check the condition of the crate and the existence of the lead and wire seal, the lack of which indicates the box was opened during transit.
- 2) The wooden crate contains a movable top panel and side panel that need to be removed in order to take out the bin. It is recommended to remove the panels of the box only on a flat surface near the place of installation of the bin. To remove the panels of the box, it is recommended to use a cordless drill/crosshead screwdriver.
- 3) Remove the panels of the wooden crate in the following order:
  - a. Remove all screws from the top panel of the crate, and then remove the top panel (1)
  - b. Remove all screws from the side panel of the crate (only one side has screws), and then remove the side panel (2)
- 4) Terra is additionally secured with a stretch foil and dustproof bag. When removing foil and bag avoid using sharp tools such as scissors or scalpels. Usage of sharp tools could damage painting or cables in case the device is equipped with a grid power module

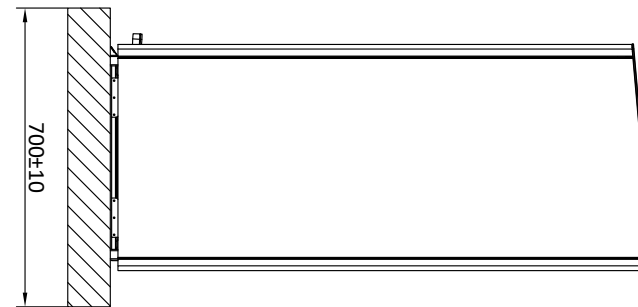
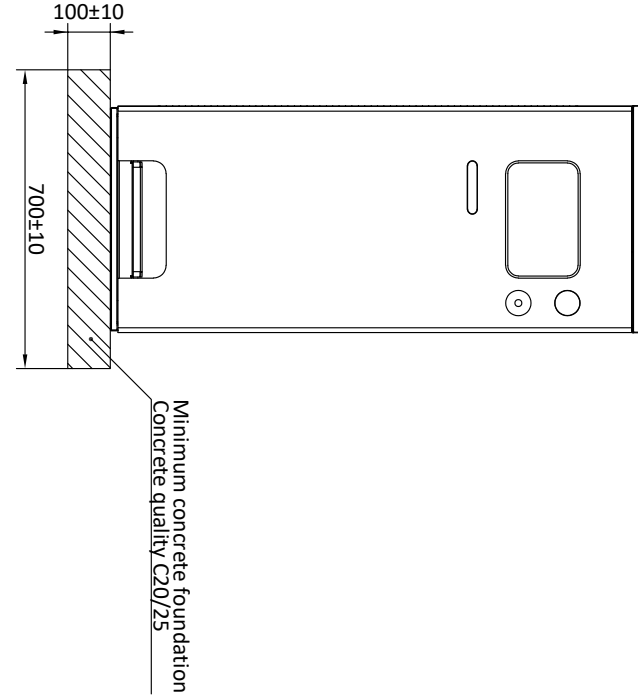
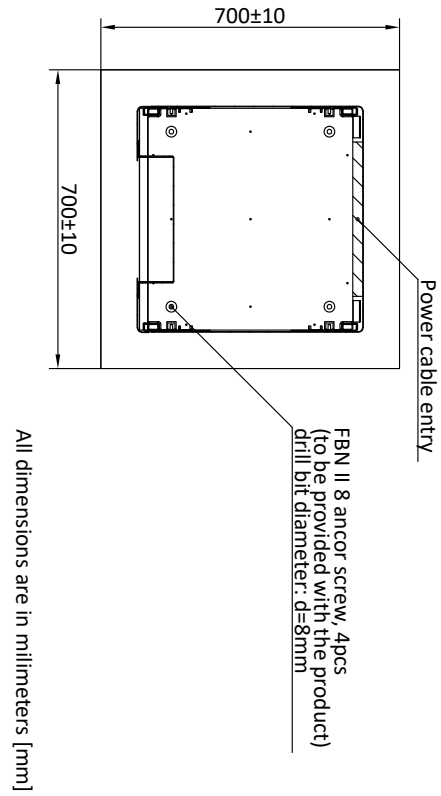


## 2. Preparing the base for installation procedure

### 2.1. Base requirements

- 1) The base needs to be flat and hard. Concrete with strength class C20/25 should be used as a reference. With regard to base, the condition is met by an equivalent asphalt or stone surface, while earth surfaces are unsuitable for installation.
- 2) The minimum space required for mounting the bin is 70 cm in length and 70 cm in width. The minimum required base depth is 10 cm.
- 3) If a hybrid module is purchased with the bin (additional option), it is necessary to prior set (pre-install) a 230/110V power cable in the base. A PGP cable 3x1.5 mm<sup>2</sup> is suitable, installed so that it protrudes from the base at a length of 80 cm. The power cable must be precisely installed in the base so that during the installation of the bin it is placed in right position.
- 4) It is important to ensure that the power cable is installed in such a way that a drill bit can't damage the cable during the drilling process.
- 5) The exact positions and dimensions for the preparation of the power cable in the base can be found on the next page in chapter 2.2. Foundation dimensions and cable position.
- 6) Before installation, be sure to unplug the power cable to prevent electric shock. The installation is to be executed by an experienced electrician.

## 2.2. Foundation dimensions and cables positions



# 3. Bin installation

The following instructions describe the installation of a Terra smart waste bin, with an additional option for the hybrid module. If you have received the bin with locked service doors, please read Chapter 5 – Service door management and then proceed with the following steps.

- 1) Place the bin on the base position where it will be permanently installed and mark drilling hole positions through the holes on the bin floor
- 2) After marking the position of the drilling holes on the base, move the bin in order to drill the holes for the anchor bolts
- 3) Drill four holes 90 mm deep in the marked positions using a Ø8 mm drill bit
- 4) Insert the FBN 8 anchor bolts into the drilled holes so that the lower part of the bolt fits entirely into the previously drilled hole. Use a hammer in order to get the bolt to enter the hole and achieve an interference fit. Only 20 mm of the bolt height should stay above the ground
- 5) Place the bin on the anchor bolts so that the bolts pass through the round holes in the bin's floor
- 6) When all four bolts are correctly positioned, install the disc spring ID10.2, S2.5 (DIN2903) on the anchor bolts, followed by the washer A8 DIN125, and finally the nut M8 DIN934.
- 7) Using a 13 mm combination wrench, tighten the nut so that the bin cannot be detached from the base.
- 8) After tightening all four nuts, check the stability of the bin and the strength of the base, and if necessary, additionally tighten the nuts

- 9) If the bin is equipped with a hybrid module cable, make sure that the cable is properly positioned, in accordance with previous chapter
- 10) Once the bin is installed in the base, proceed with connecting the grid power cable. Connect two power cables with a waterproof power connector that is included in the packaging and located on the left inner side of the bin

**NOTE:** The following photo is an example of properly installed anchor bolts. The bolts should not protrude above the bin floor!



## 4. Occasional and permanent bin activation

The bin allows two working modes, i.e. two modes of activation:

- Permanent activation (permanent work mode) intended for permanent activation of the bin after the bin is installed at its final location
- Intermittent activation (intermittent work mode) intended for bin used intermittently for trade fairs or presentation purposes

Depending on the method of work, the bin and the Solos platform communicate and exchange data in a different manner.

### 4.1. Occasional bin activation (intermittent work mode)

To set the bin in intermittent work mode, shortly press the ON/OFF button located on the electronics box attached to the inner side of the service doors

As soon as the bin is switched on, the ON/OFF button will light up and the bin will send an information to Solos platform that it is switched to occasional mode, which means that the bin is not monitored.

To switch off the bin, shortly press the ON/OFF button, after which the bin switches off all modules.

### 4.2. Permanent bin activation (permanent work mode)

Permanent activation of the bin must be used when installing the bin in the base at its final location. Permanent activation is enabled by pressing and holding the ON/OFF button for 15 seconds, after which the bin will turn on and the button will flash several times. The ON/OFF button is located on the electronics box attached to the inner side of the service doors, as is the case for intermittent activation.

After permanent activation of the bin, the ON/OFF button loses function, and it is no longer possible to use it to switch the bin on or off. If you need to turn off the bin, you need to open the MANAGE application via the Solos monitoring platform, select the Terra smart waste bin for which you want to deactivate the permanent mode, and uncheck the "permanent work mode" field. The next time the bin is connected to Solos (usually every 30 minutes), it will receive deactivation information, and it will be possible to switch the bin off by shortly pressing the ON/OFF button.

## 5. Service door management

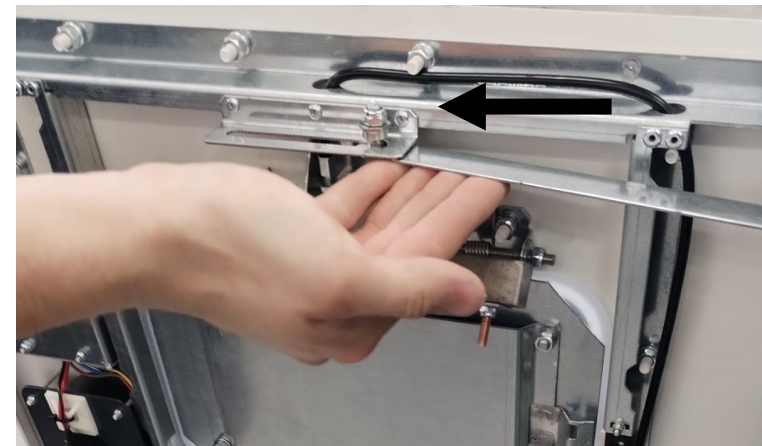
Terra service doors can be accessed only by authorized users, by using special RFID keys. Each Terra smart waste bin is delivered with one “admin” RFID key and additional RFID keys can be purchased separately.

- 1) On the service doors, you will find a doorknob and RFID scanning surface for unlocking the service doors. Inside the doorknob, there is an activation button to start RFID scanner



- 2) Press the button inside the doorknob (1)
- 3) After pressing the button, immediately tap your RFID key onto the RFID scanning surface (2), the service doors should trigger electromechanical locks (a "clicking" sound will be heard)
- 4) While the electromechanical locks are "clicking", completely open the service doors.  
**NOTE:** If the main battery is completely empty, the backup battery will secure the service door opening. The backup battery takes up to 5 seconds to open the service door, so keep the RFID key on the RFID surface and wait for the “clicking” sound

- 5) Once the service doors are opened, you should hear a buzzer noise. The buzzer signals if the doors are opened or properly closed and locked. When you close the service doors, the buzzer needs to stop making noise. If the buzzer is still making noise after closing the service doors, please check them again, as this signals that the service doors are not properly closed and/or locked
- 6) Service doors are equipped with a door stopper. This stopper enables simple handling with the inner plastic bin in case of bad weather (e.g. strong wind). The stopper ensures that the service doors are not moving
- 7) To disengage the stopper, simply lift the pin on the service doors up and start closing the service doors





## 6. Emptying inner plastic container

Terra smart waste bin is equipped with an inner plastic container, usually 120-litre capacity (other capacities available on request). The inner container is designed in accordance with EN 840 standard which specifies dimensions and design requirements of mobile waste and recycling containers with 2 wheels. This also provides an option to empty the inner container by using a truck with a lift, thus removing the need for manual emptying by lifting containers with hands.

- 1) After the service doors are opened in accordance with Chapter 5 – Service door management, you can proceed with emptying the inner plastic container
- 2) Simply take the inner container's front side with your hands, lift it up from the ground and slide the container out of Terra. The inner container is equipped with 2 plastic wheels and should slide easily
- 3) Once the inner container is emptied, slide it back inside the Terra, in such a way that the plastic wheels are facing the back side of the bin. **NOTE: Make sure the wheels are facing the back side of the bin! Any other orientation of the inner plastic container can damage the product in case Terra is equipped with a compaction system!**



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