

# TWIG PROTECTOR Ex

Intrinsically Safe and Rugged Protection Device (ATEX)



TWIG Protector Ex protection device is designed to be your personal "guardian angel" – intended for all areas of personal and professional safety in potentially explosive areas.

Instructed by simple icons, the device is especially suitable for loneworkers as well as for applications or situations where simplicity and robustness is a must

Manufacturer:  
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CE 0537

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Twig Com Oy declares that this mobile device, type TCP90EU, is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/.

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Some of the features described in this guide are optional and intended to be purchased separately. For more information, please contact your dealer.

For more information, details and descriptions, including device configuration and assortment of chargers and accessories, visit the web site: [www.twigcom.com](http://www.twigcom.com).

## WHAT TO DO FIRST

**DOWNLOAD PC CONFIGURATION SOFTWARE, INSTRUCTIONS AND USB DRIVERS FROM <ftp://support.twigcom.com/public/>**

**If possible turn off the PIN request from the SIM card. If not, change the PIN code to 9999 or change the PIN code that is programmed to Protector to same that is used in SIM card before**

starting the phone. Changing the PIN code that unit automatically uses, please refer to configuration guide and PC Configure program.

## INSERTING THE SIM CARD



1. Slide the SIM card to the holder from the hole on the side of the unit slightly tilting the SIM card towards the keyboard when pushing it in. Contacts in the SIM are facing towards keypad and the cut corner of the card outward. Use the silver tape in the salesbox to assist if you need to remove it or inserting to SIM holder is difficult. **Do not use force as the SIM will go to its place easily.**

2. Push the SIM card all the way in with e.g. another SIM card or some small stick. Remove the tape if you used that pulling sideways, so that SIM doesn't come out. **Do not use sharp or metal tools or objects!**

3. Insert the rubber plug to the SIM holder hole.

4. Insert the seal tape carefully on top of the rubber plug.

**C.f. [ftp://support.twigcom.com/Public/Video\\_Instructions/](ftp://support.twigcom.com/Public/Video_Instructions/)**

**The device is dust and water proof. The protection category for the device is IP67. To meet the requirements, the rubber plug and the sealing tape must be inserted in place correctly. If the seal or plus is damaged it must be changed immediately to maintain tightness and warranty.**

## INITIALIZING THE DEVICE

When you start using the device for the first time, you should charge the battery first. Please note that the battery will reach its full capacity only after two or three charging times.

## POWER SUPPLY

Device is equipped with system, that protects the unit for being overloaded or malfunctioning causing danger to user. In rare case where the device battery is overloaded. e.g heavy GPRS transmission, the protection system turns the device off. Device can be turned on again by connecting to charger. This must not be done inside Ex area. This is normal behaviour. It is suggested not to use GPRS to telematics to minimise the possible automatic turning off.

Mains charger with the charger adapter or charging cradle  
Standard Li-Ion battery integrated to the unit is 1300mAh Li-po battery. The battery type and capacity may vary depending on the market area and model of the unit in the sales package.



## MAINS CHARGER

The mains charger should only be used indoors. Make sure that the voltage in the country which you are staying corresponds to the voltage marked on the charger. When charging, connect the mini USB connector to mini USB connector in charging adapter or the charging cradle. Twist the Charging adapter to the bottom of the phone from keyboardside down, all the way until it clicks on its place on back cover. If placing to charging adapter, place first the bottom towards the charging pins in the cradle and the let the top of the unit lie down.

## CARRY CASE

**Only leather carry case YN3310EX is allowed to be used with the Protector Ex IIC not to inferiorate the device surface resistance**

## MAINS CHARGER

The mains charger should only be used indoors. Make sure that the voltage in the country which you are staying corresponds to the voltage marked on the charger. When charging, connect the mini USB connector to mini USB connector in charging adapter or the charging cradle. Twist the Charging adapter to the bottom of the phone from keyboardside down, all the way until it clicks on its place on back cover. Charge minimum 3 hours after use.

If placing to charging adapter, place first the bottom towards the charging pins in the cradle and the let the top of the unit lie down.

## CHARGING

The device controls the charging status, the battery temperature and power supply during the charging operation. The ideal temperature range for charging is +10°...+30°C. If charging the battery above or below these temperatures the life of a battery may be shortened. Also, the battery may not reach full capacity. Battery charging with supplied mains charger is not allowed below +0°C or above +40°C

When charging the Li-po batteries with the USB charger, about 70% of the battery capacity will be charged quickly, but charging the remaining 30% takes relatively more time. Also note that humidity, temperature, age of the battery and currently used features (e.g. the GPS) affect the time spent on charging.

Standard CE-approved USB car charger ( 5VDC, 500mA ) may be used for charging.

## BATTERY CARE, MAINTENANCE AND DISPOSAL

The continuous operating time is less when using an old battery than a new battery. When storing unit for a long time, it should be kept cool and with fully charged battery in a dry place. Li-po batteries do not

contain heavy metals which can damage the environment. Li-po batteries should be disposed of according to the country-specific regulations.

## ENVIRONMENTAL EFFECTS IN USAGE

### SIGHT

The device must have an unobstructed view to satellites at any time. In marginal conditions (e.g. when staying in surroundings with heavy tree cover or in a shadow area in between base stations) GPS positioning may not work properly.

The device can be used like a standard GSM phone with the limited feature set. In some cases, the device can be built in clothes or special vests. If the device is mounted somehow, it must be attached to the surface so that the back of the device is facing up and the top of the phone upwards. To ensure proper functioning of the GPS and GSM, the unit can be covered with thin low loss material such as plastic, fiber glass or clothes, but not with metal.

### TEMPERATURE RANGES

•Usage: -20°C to +40°C, at temperatures below -20°C, or above +55°C, the battery will not supply power and the device will shut down to prevent damage. Upon warming up/cooling down, the device will function properly again

•Charging: Battery must not be charged below 0°. Likewise, charging above +50 °C is prevented.

## USER INTERFACE

### LOUDSPEAKER

### DISPLAY

- GSM status
- GPS status
- Battery status

### KEYS

#### SEND KEY

- For answering calls

#### END KEY

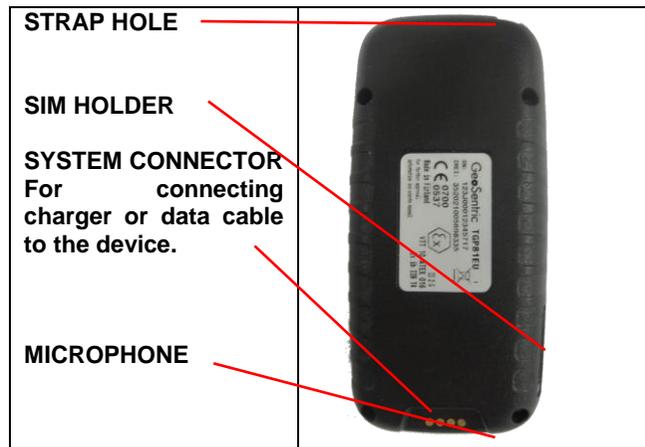
- For rejecting/ending calls
- For cancelling some operations
- Power on/off

### NUMBER KEYS

- For making information call/ sending position

### TWIG SOS BUTTON

- For making emergency calls/sending emergency reports



DISPLAY INDICATORS	
DEVICE IN STAND-BY MODE	
	BATTERY INDICATOR
	TELEMATICS FEATURES INDICATORS
GSM NETWORK INDICATORS	GPS POSITIONING INDICATORS
FI NETWORK	
NETWORK OPERATOR/ SERVICE PROVIDER IDENTIFIER	
BATTERY STATUS	
	The water level indicates charge left in the battery. The higher the level, the more charge is left. Shown only when unit is turned ON and disconnected from charger.
	During charging, the battery icon is changed to indicate this event.
GSM / GPRS NETWORK STATUS	
	GSM is on
	GPRS is used for telematics
	GPRS is active for telematics
	.GSM is roaming. Phone is using other than home network. Call and position transmissions are charged according to roaming agreements. Position transmissions may have been blocked automatically.
	Bars on top of the network status icon indicate the strength of the GSM network. The more bars and the taller the bars, the better the GSM network. - Four bars - high network strength - No bars - no network
GENERAL STATUS ICONS	
	TWIG SOS is active.
	TWIG SOS in is post emergency mode. Position requests are possible from emergency numbers
	Tracking is active to one or more destinations
	Man Down Alert is active. Automated emergency cycles are possible

	Wireless Alert ( wrist alert) connection available
GPS POSITIONING STATUS	
	GPS is active
	GPS is sleeping
	GPS is not available
	Bars on top of the network status icon indicate the accuracy of the last GPS position. The more bars and the taller the bars, the better the accuracy. If the position is older than 1 – minute the signal bars are shown as wireframes

## DISPLAY / TONE NOTIFICATIONS

GENERAL NOTIFICATIONS	
	Processing. An operation is in progress, please wait.
	General failure. Shown when an operation fails. E.g. if you try to make a call when there is no number pre-configured in the device. Simultaneously, the Failure tone is played.

	SIM failure. Shown when there is no SIM card inserted in the device, or if the PIN code was rejected. Simultaneously, the Failure tone is played.
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## CHARGING NOTIFICATIONS

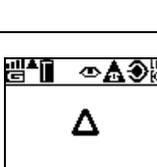
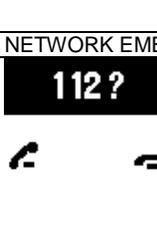
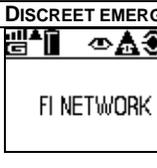
	Battery low. Shown when there is a need to recharge the battery (or replace it with another recharged battery). Simultaneously, the Battery low tone is played.
	The device is connected to a charger. Settings during battery loading take place. Simultaneously, the Charging tone is played.
	The device is disconnected from a charger. Settings during battery loading are ended, the device returns to normal operation.

## NOTIFICATIONS REFERRING CALLS OR MESSAGES

	Normal incoming call. If available, the name associated with the calling number/the phone number itself is shown on the bottom. Shown until the call is answered (to answer, press SEND KEY).
	Initiating information call or position report. Press the corresponding number key and hold it down while this notification is shown.
	Sending a position report. Simultaneously, the Message sending tone is played.
	Making an information call. Shown until the call is answered.
	A call is in progress. Shown while the call is connected.

## START EMERGENCY CYCLE NOTIFICATIONS (DISPLAYS ON)

	Starting emergency cycle (a long press): Emergency tone settings are switched on. Press the TWIG SOS button and hold it down until the wedges are all turned black.
	Starting emergency cycle (two quick presses):

	Press the TWIG SOS button briefly. Emergency tone settings are switched on. Press the button again when the second circle starts blinking.
	Emergency cycle cancellation period. A countdown timer is shown on the bottom. The timer counts the cancellation time left (in seconds). Simultaneously, the <b>Cancellation</b> tone is played. To cancel the emergency cycle, do it while this notification is shown (by pressing the END KEY).
<b>OTHER EMERGENCY CYCLE NOTIFICATIONS (DISPLAYS ON)</b>	
	Emergency cancellation. Shown right after the emergency cycle was cancelled.
	Emergency completion. Shown when the emergency cycle ends normally, or when the emergency mode is ended manually.
	Emergency call retry. Emergency numbers can be voice call numbers. The notification is shown when the device makes another call attempt to a number.
	Emergency mode/Working. The device is through with emergency calls, but sending messages, message confirmation or position refresh is still going on.
	Emergency confirmation message received. After receiving confirmation, the device will end resending of an emergency message. Simultaneously, the <b>Message reception</b> tone is played.
	"Post-emergency mode". The GSM operator's name is replaced by the emergency symbol. While this notification is shown, the device can be tracked by emergency numbers, also emergency tone and display settings are kept on. This mode can be terminated manually, by pressing the c key.
<b>NETWORK EMERGENCY CALL ( 112, 911, 000, 999, 08 etc)</b>	
	Network emergency call query. Shown when the TWIG SOS button is pressed but making emergency cycle is NOT possible (e.g. SIM card is missing or no roaming network available). You may still try to make network emergency call by pressing END KEY. You can also exit the query without making an emergency call by pressing END KEY
<b>DISCREET EMERGENCY CYCLE (DISPLAY NOTIFICATIONS OFF)</b>	
	During the discreet emergency cycle, the device looks like it is in stand-by mode. The only indicator of the ongoing emergency cycle is the Emergency cycle indicator appearing to idon area. When the icon disappears or changes cycle is over or moved to post emergency mode. Also tones can be turned off.
<b>NOTIFICATIONS REFERRING SENSOR ALERTS</b>	
	Pre-alarm for sensor alert is NOT set. Shown when "the cancel timer" is not configured, and Emergency cycle starts right away. To mute the audible alert tone, press the

	lowmost side key Pre-alarm for sensor alert is set. The countdown timer shows that you still have 27 seconds time left to cancel the sensor alert if you so desire. To cancel the emergency cycle, lift the device to vertical position. Do it while this notification is shown. To let the emergency cycle take place: Do nothing. To mute the audible alert tone, press the number 1 key
	Alert state ended. Shown right after the emergency cycle is finished, or the sensor alert is cancelled.
	Post-alarm state. Shown when the emergency cycle is completed, and the device makes audible alarms at regular intervals. You can receive phone calls and answer them by pressing 1. In order to stop the post-alarm tone, the device must be lift up to vertical position.

## BASIC KEY FUNCTIONS

### TURNING THE DEVICE ON

1. Press END KEY and hold it down for a few seconds.
2. The logo is shown.

### TURNING THE DEVICE OFF

1. Press the END KEY and hold it down for a few seconds.
2. The logo is shown and the Power down tone is heard.

### ADJUSTING VOLUME DURING A CALL

Press the 1 and 2 keys during call. ! to lower and 2 to rise volume .

### ANSWERING INCOMING CALLS

Press the SEND KEY key when the device alerts.

NOTE: The device may be configured to answer some/all incoming calls automatically. It may even be, that all incoming calls are bloked and you can not receive calls.

### DROPPING/ENDING/CANCELLING A CALL

Press the END KEY briefly.

### MAKING AN INFORMATION CALL

Press the corresponding number key and hold it down for a few seconds. The device will call to configured number.

### SENDING POSITION REPORT

1. Press the corresponding number key and hold it down for a few seconds.
  2. After sending the position report, the device may receive an incoming information call - depending on service.
  3. When the device starts alerting, answer the call by pressing the SEND KEY.
- NOTE: The device may also be configured to answer the call automatically.

## MAKING EMERGENCY CALLS AND SENDING EMERGENCY MESSAGES (EMERGENCY CYCLE)

Press the TWIG SOS button according to configuration (a long press/ two quick presses). The device will make emergency calls and send emergency reports (emergency messages including position information) according to configuration.

### CANCELLING EMERGENCY CYCLE

During cancellation period you may hear the cancellation tone and see timer showing time left for cancellation.

- To cancel the entire emergency cycle, press the END KEY briefly during the cancellation period.
- When the emergency cycle has already started you may, depending on configuration still cancel the rest of the calls and messages: Press the END KEY and hold it down for several seconds. After succesful cancellation the device will return to normal operation and switch back to normal tone and display settings.

### ENDING EMERGENCY MODE MANUALLY

The emergency mode must be terminated manually. This means, the emergency tone settings are kept on and the emergency numbers are permitted to track the device without further notice.

Emergency tones and tracking option are switched on from the moment you start the emergency cycle (by pressing the TWIG SOS button) until you end the emergency mode (by pressing the END KEY briefly). **Another alarm cycle is not possible before is is ended.**

### SOME CIRCUMSTANCES MAY AFFECT ON EMERGENCY CYCLE AND MODE

- Being in a shadow area of the GSM network at the time of the event.
- Poor GPS coverage during emergency cycle may cause the emergency cycle completion to slow down.
- Busy telephone lines when connecting (voice) calls.
- Message transmission errors caused by the carrier of an SMS/GPRS, i.e. the network operator.

### SENSOR ALERTS

To cancel sensor alert and prevent emergency cycle from starting, change the phone to allowed position ( horizontal or vertical) or move it gently if it is configured to detect only movement. Do it while the countdown timer is still shown. To let the emergency cycle take place: Do nothing. To mute the audible alert tone, press the 1 key

### INCOMING/OUTGOING MPTP MESSAGES

The device may send or receive some MPTP messages. In most cases messages are either remote configuration/activation messages, some notifications, emergency reports or various types of position messages and they work autonomously according to configuration.

- In most cases there are no display notifications.
- Message sending/reception tones are configurable (beep sound as a default).

## CARE AND MAINTENANCE

NOTE: The instructions below apply to the device, its accessories and integrated batteries. •Dust and dirt may damage the moving parts of the device. Do not use or keep the device in dusty or dirty surroundings.

•Do not open the device by yourself or pierce holes in it.

•Rough handling may break the circuitry inside the device. Do not drop, knock, twist or shake the device.

•Keep the device dry. Liquids contain minerals which could corrode electronic circuits. If the device gets wet, turn it off and dry the device. •Even though the device is waterproof, do not wet the device unnecessarily or immerse it in water.

•Protect the device from heat. High temperatures may shorten the life of the electrical devices, melt or warp plastics and damage batteries. Do not warm up the device or battery or use it near fire.

•Do not short-circuit the charging contacts with a metallic object, such as a coin, a clip or a set of keys. This can cause accidental short-circuiting and damage the device.

•Charge and recharge the battery only with the charger specified in the Operating instructions/Quick Guide.

•Clean the device with a soft cloth, dampened slightly with mild soapy water. Do not clean the device with harsh chemicals, solvents or other corrosive substances.

•Only manufacturer is allowed to service the device.

## SAFETY AND PRECAUTIONS

The user of the device is fully responsible for ensuring that the TWIG Protector Ex is used in explosive atmospheres in accordance with the applicable regulations. The category of TWIG Protector Ex is II 2 G Ex ib IIC T4 Gb. TWIG Protector Ex is an intrinsically safe, waterproof, dust- and impact-resistant mobile safety device phone for industrial application in areas with an increased risk of explosion in accordance with directive 1999/92/EC (ATEX 137). Only use approved accessories.

## SAFETY INSTRUCTIONS

These safety instructions contain information and safety regulations which are to be observed without fail for safe operation in the described conditions. Nonobservance of this information and these instructions can have serious consequences or it may violate regulations. Please read these safety instructions carefully before starting to use the unit. In case of any doubt (in the form of translation or printing errors) the English language operating instructions shall apply.

## FAULTS AND DAMAGES

If there is any reason to suspect that the safety of the unit has been impaired, it must be withdrawn from use and removed immediately from the Ex-area. Measures must be taken to prevent it from being restarted accidentally. The safety of the device may be compromised, if, for example:

- there is visible damage to the housing.
- the unit has been subjected to excessive loads.
- the unit has been improperly stored.
- the unit has been damaged in transit.
- unit markings or inscriptions are illegible.
- malfunctions occur.
- permitted limit values have been exceeded.

## SAFETY REGULATIONS

Use of the mobile safety device TWIG Protector Ex assumes that the operator complies with conventional safety regulations and has read the certificate in order to eliminate faulty operation of the unit. The following points are to be observed:

- The battery of the device may not be changed inside the Ex-area.
- The battery of the device may only be charged outside the Ex-area and only then using the original mains charger or USB data cable.
- The cover for the SIM card must be closed in the Ex-area.
- The SIM card may not be changed in the Ex-area

- Only approved TWIG Protector Ex accessories may be used.

- Connecting USB cable or any other connector to device is not allowed in Ex-area.

- Opening and repair of the device is only permitted in the factory service

- User takes full responsibility on making sure that device may only be used in areas which are in accordance to the Ex approval of the unit printed in the type label of the unit.

## TELEMATICS PROTOCOL

MPTP (Mobile Phone Telematic Protocol) allows, among other things, tracking of the device over the SMS communication. Automatically sent telematics messages are only allowed to authorised numbers configured in the device. Such numbers can be, e.g. emergency and service center numbers. Position of the device is retrieved by the GPS, or by the network parameters -the latter is a network-dependent service.

The carrier for telematics messages is an SMS-message or GPRS data. Deliveries of all messages is fully handled by and in the responsibility of the GSM network operator and services can vary substantially. The charge of a protocol message is determined on the contract by the service provider.

## GPS

The Global Positioning System (GPS) is operated by the government of the United States, which is solely responsible for its accuracy and maintenance. The system is subject to changes that could affect the accuracy and performance of all GPS equipment.

## EMERGENCY CALLS

The device is an aid and should never be relied upon as an only emergency device. Its functionality is dependent on GSM network and GPS satellites which may not be available all the time. To make emergency calls, the device must be turned on and located in an area with adequate GSM network signal strength.

Making TWIG SOS emergency call also requires GPS satellite coverage and a valid SIM-card. Emergency calls may not be possible on all GSM phone networks or when certain network services or phone features are in use. In unclear cases, consult the network operator.

## GENERAL

•Traffic: Strictly adhere to all eventual European and national legislation and also honour other eventual safety recommendations when using the device while driving a vehicle. Place the device in its holder, do not leave it on the passenger seat or some other place where it can break loose in a collision or a sudden stop. When receiving a call in an awkward driving situation, you must always put safety before other priorities and courtesy. If you feel uncomfortable about using a device while driving, you should not use it.

•Vehicles with air bags: An air bag inflates with great force. Do not place objects, including either installed or portable wireless devices, in the area over the air bag or in the air bag deployment area.

•External alert: The use of the alert device to operate a vehicle's lights or horn on public roads is not permitted.

•Children: Keep the device and its accessories away from small children to avoid causing injury to themselves or others. Damage to the device or its accessories is also thus avoided.

•Power supply: This equipment is intended for use with the specified power supplies listed in the Quick Guide/Operating Instructions. Any other usage will invalidate any approval given to this apparatus and may be dangerous.

•Other accessories: Any other accessories used should also be approved by the device manufacturer. Check the compatibility of new

power supply units and other accessories at the dealer or manufacturer.

•Connections: All installations, connections and service regarding the device, its power supply and accessories should be approved by the device manufacturer. Use of any unauthorized accessories, modifications or attachments may be dangerous and voids the device warranty if said accessories cause damage or a defect to the device.

•Magnetic fields: The device contains small magnetic components. Even though the magnetic fields of the components are weak, they might damage magnetic cards, such as bank and credit cards. We recommend that you would keep the device away from magnetic cards.

•Storing positions: Position information is stored correctly in the device when the GPS is turned off (from the GPS menu) or powered off (by pressing the topmost side key). To prevent the memory from becoming corrupted, never power off the device by removing the battery.

•Neodymium magnets: Some models include strong magnets. Magnets could effect the functioning of pacemakers and implanted heart defibrillators. If you wear these devices keep sufficient distance to magnets. Warn others who wear these devices from getting close to magnets. Keep magnets away from devices and objects that could be damaged by magnetic fields.

## RADIO FREQUENCY (RF) ENERGY

•Aircrafts: Turn your device off before boarding any aircraft and do not use the device while in the air. Besides being illegal, the use of a device in an aircraft may endanger the operation of the aircraft or disrupt the mobile network. Failure to comply with this instruction may lead to suspension or denial of mobile phone services, and possibly even legal action.

•Hospitals: Turn your device off before entering hospitals or other health care facilities where medical electronic equipment may be in use. Such devices can be extremely sensitive to radio frequency interference. Only use the device with permission and under the instruction of hospital staff.

•Medical devices: Remember that any personal medical devices (such as hearing aids or pacemakers) may be affected by RF energy if they are not adequately shielded. Consult the manufacturer or vendor of the equipment to determine the proper shielding.

•Posted facilities and country-specific regulations: Power off the device in any facility where posted notices require to turn off mobile phones. Also follow all the country-specific regulations applicable where device is used.

•Potentially explosive atmospheres: Turn off the device at refuelling points, e.g. gas stations. Also observe restrictions on the use of radio equipment in fuel depots, chemical plants or where blasting operations are in progress because remote control RF devices are often used to set off explosives. Do not store or carry flammable liquids, gases or explosive materials in the same compartment as the device, its parts or accessories.

•Other electrical equipment: Using the device may cause interference with a vehicle's electronic equipment if it is not adequately shielded. Consult the manufacturer or the vehicle seller to determine the proper shielding.

•Computers: Remember that using the device close to a computer may cause interference. When using your device near such equipment keep a distance of about one meter.

•Body parts: When the device is in operation do not touch the antenna with eyes, mouth or bare skin to guarantee proper function.

## WARRANTY

Twig Com Ltd. warrants to the original purchaser ("Company") that this Twig Com device and all accessories originally provided by Twig Com in the sales package ("Product") are free from defects in materials, design and workmanship under normal use in accordance with the operating instructions and pursuant to the following terms and conditions. Warranty periods are determined with the purchase agreement. Individual warranty terms and conditions are available from Twig Com or from local distributor.

**The warranty is void if the unit is opened or the warranty seal on the screws are tampered**