TRANSLATION OF THE ORIGINAL INSTRUCTIONS
- Keep handy at the place of use -

<table>
<thead>
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<th>Wind turbine system</th>
<th>i-700, i-1000</th>
</tr>
</thead>
</table>
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2 - General -

2.1 About this translation of the original instructions

2.1.1 Revision status of the original instructions

Revision date: ................................................................. 24.07.2018
Revision index: ................................................................. 00

2.1.2 Conditions for installing and operating the wind turbine system

Please make sure that

• The wind turbine system has been erected correctly by a suitably trained person.
• All operating personnel have read and fully understood this translation of the original instructions
• The wind turbine system is properly maintained and repaired.

2.1.3 Availability of the instructions

Keep this translation of the original instructions handy at all times, so that it can be referred to by all persons working on or with the wind turbine system.

2.2 Conventions used in this translation of the original instructions

Safety information is always identified by a signal word and in some cases also by a hazard-specific symbol.

<table>
<thead>
<tr>
<th>Signal Word</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>DANGER!</strong></td>
<td>Immediate danger! Non-observance of the safety instructions will result in serious or fatal injury!</td>
</tr>
<tr>
<td><strong>WARNING!</strong></td>
<td>Potentially dangerous situation! Non-observance of the safety instructions can result in serious or fatal injury!</td>
</tr>
<tr>
<td><strong>CAUTION!</strong></td>
<td>Potentially dangerous situation! Non-observance of the safety instructions can result in minor or moderate injuries!</td>
</tr>
<tr>
<td><strong>IMPORTANT!</strong></td>
<td>Potentially dangerous situation! Non-observance of the safety instructions can result in damage to property or pollution of the environment!</td>
</tr>
</tbody>
</table>
2.2.1 Other symbols used

The following symbols are used in this translation of the original instructions as well as on the wind turbine system itself:

Warning signs

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>⚠️</td>
<td>General warning!</td>
</tr>
<tr>
<td>⚡</td>
<td>Danger: High voltage!</td>
</tr>
<tr>
<td>⚠️</td>
<td>May start without warning!</td>
</tr>
<tr>
<td>🌳</td>
<td>Environmental hazard!</td>
</tr>
</tbody>
</table>

Table 1 Warning signs

Mandatory signs

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>📚</td>
<td>Read manual before operating!</td>
</tr>
<tr>
<td>⚠️</td>
<td>Isolate before opening!</td>
</tr>
</tbody>
</table>

Table 2 Mandatory signs

2.2.2 Information

Note

Indicates general information and recommendations.

2.3 Name and address of the manufacturer and his authorised representative

<table>
<thead>
<tr>
<th>Name</th>
<th>Address</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALTINEL ENERJI DIS TIC. ELEK. ELEKTRONIK SAN.VE TIC. LTD. STI</td>
<td>Mermerciler Sanayi Sitesi Merkezi 7 Cadde No:8/2 34524 - Beylikdüzü / Istanbul / TURKEY</td>
</tr>
<tr>
<td>iSTA Breeze Serkan Ürüt</td>
<td>Riemens str. 31, DE - 74906 Bad Rappenau</td>
</tr>
</tbody>
</table>

Table 3 Manufacturer

<table>
<thead>
<tr>
<th>Name</th>
<th>Address</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 4 Authorised representative
2.4 Warranty and liability
The “General Terms of Sale and Delivery” of the manufacturer or his authorised representative apply.

2.5 Product feedback
Please notify the manufacturer or his authorised representative about any of the following:
- Accidents
- Potential safety hazards associated with the wind turbine system
- Ambiguities in this translation of the original instructions
- Description of the wind turbine system

3 - Technical Description -

3.1 Intended use
- The wind turbine system may only be used as a “small wind turbine system” (SWTS) to generate power in accordance with EN 61400-2.
- The wind turbine system may only be operated in accordance with the ratings and in the approved wind class (refer to the technical data).
- Observance of the original instructions and compliance with the maintenance and repair instructions are essential preconditions of use for the intended purpose.

3.2 Reasonably foreseeable misuse
All forms of use which deviate from or exceed the limits of use described above are considered to be contrary to the intended purpose. The manufacturer is not liable for any damage resulting from such use.
No liability will be accepted by the manufacturer if the equipment has been altered as well as in the event of improper assembly, installation, start-up, operation, maintenance or repair.
Only original parts supplied by the manufacturer are approved as spare parts or accessories. Any spare parts or accessories not supplied by the manufacturer have not been tested for operation and could be detrimental to reliability. No liability will be accepted by the manufacturer for any damages which result from the use of non-approved spare parts or accessories.
Reasonably foreseeable misuse includes:
- Operation outside the manufacturer’s specification
- All modifications or changes to the wind turbine system without the manufacturer’s written approval!
- Use of parts other than iSTA Breeze original parts.
- Operation in non-approved SWTS classes.
- Operation in strong winds or hurricanes.
### 3.3 Main components

#### Fig. 1: Main components of the wind turbine system

<table>
<thead>
<tr>
<th>No.</th>
<th>Component</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Wind turbine</td>
<td>Converts wind energy into electrical energy</td>
</tr>
<tr>
<td>2</td>
<td>Switch switch AC Emergency Stop Button (optional)</td>
<td>Emergency shut-down. When pressed, the wind turbine must be short-circuited.</td>
</tr>
<tr>
<td>3</td>
<td>Charge controller (optional) Type: i/HCC 800</td>
<td>Generates electrical voltage (12 / 24 / 48 VDC). The iSTA Breeze charge controller.</td>
</tr>
<tr>
<td>4</td>
<td>Battery (optional)</td>
<td>Stores electrical energy (Acid, Gel)</td>
</tr>
<tr>
<td>5</td>
<td>Solar panels (optional)</td>
<td>Convert solar energy into electrical energy</td>
</tr>
<tr>
<td>6</td>
<td>To converter (optional)</td>
<td>Converts 12/24/48 VDC into 110/220 VAC</td>
</tr>
</tbody>
</table>

**Table 5 Main components and their functions**

- **Recommendation:**
  Several batteries can be connected in series or series. Depending on which system voltage is used.
### 3.4 Main components of the wind turbine

**Fig. 2:** Main components of the wind turbine

<table>
<thead>
<tr>
<th>No.</th>
<th>Component</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Nose</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>Rotor blade</td>
<td>3</td>
</tr>
<tr>
<td>3</td>
<td>Hub for holding the blades</td>
<td>1</td>
</tr>
<tr>
<td>4</td>
<td>Generator for producing electricity</td>
<td>1</td>
</tr>
<tr>
<td>5</td>
<td>Boom for wind direction flag</td>
<td>1</td>
</tr>
<tr>
<td>6</td>
<td>Tail vane for turning the blades into the wind</td>
<td>1</td>
</tr>
<tr>
<td>7</td>
<td>Adapter stud ∅ 37 mm for attaching the wind turbine to the tower</td>
<td>1</td>
</tr>
</tbody>
</table>

*Table 6 Main components of the wind turbine and their functions*
### - Technical Data -

<table>
<thead>
<tr>
<th>Designation</th>
<th>i-700</th>
<th>i-1000</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Generator</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Type</td>
<td>Permanent magnet rotor, brushless, gearless, maintenance-free</td>
<td></td>
</tr>
<tr>
<td>Weight [kg]</td>
<td>18,5</td>
<td>22</td>
</tr>
<tr>
<td>Max. power</td>
<td>12V 45A, 24V 25A, 48V 13A</td>
<td>24V 40A, 48V 17A</td>
</tr>
<tr>
<td>Current</td>
<td>3-phase</td>
<td></td>
</tr>
<tr>
<td>Start of charging</td>
<td>Approx. 3 m/s (wind speed)</td>
<td></td>
</tr>
<tr>
<td>Housing material</td>
<td>Aluminium</td>
<td></td>
</tr>
<tr>
<td>Direction of rotation</td>
<td>Any</td>
<td></td>
</tr>
<tr>
<td>Test standard</td>
<td>EN 61000-6-1 (electromagnetic compatibility – susceptibility)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>EN 61000-6-3 (electromagnetic compatibility – emissions)</td>
<td></td>
</tr>
<tr>
<td><strong>Rotor blades</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hub flange</td>
<td>Plastic</td>
<td>Aluminium</td>
</tr>
<tr>
<td>Diameter, approx. [m]</td>
<td>1.25</td>
<td>1.15</td>
</tr>
<tr>
<td>Rotor Blades</td>
<td>3 pieces of plastic with glass fiber mixture</td>
<td></td>
</tr>
<tr>
<td>Approx. weight per rotor blade [g]</td>
<td>620</td>
<td>720</td>
</tr>
<tr>
<td>Blade Color</td>
<td>Black or White</td>
<td></td>
</tr>
<tr>
<td>Direction of Rotation</td>
<td>from the front in a clockwise direction</td>
<td></td>
</tr>
<tr>
<td>Max. Speed [rpm]</td>
<td>1300</td>
<td>1000</td>
</tr>
<tr>
<td>Noise emissions [dB(A)]</td>
<td>60</td>
<td></td>
</tr>
</tbody>
</table>

*Table 7  Technical data*
The Wind / Solar Hybrid Charge Controller from IstaBreeze® is an intelligent controller of the wind turbine and solar cells that controls you at the same time. The high-end device thus controls your island system. It is used to safely and efficiently charge and control your battery with the Wind Generator / Solar Module combination.

With its discreet appearance, simple operation, with integrated protection functions, this device has high efficiency and low no-load losses. This version of the controller will significantly increase the life and stability of the whole system, especially the batteries.

The special features and product information are listed below:

- Use of solid state components. Increasing the life of the controller. Microprocessor controlled charge with integrated voltage and current limiting. Electromagnetic brake control, generator is automatically braked gently with full battery,
- modern braking system in three steps to avoid immediate blockage of the turbine. Increasing the lifetime of the stator. Protection against overcharging, overdischarge, short circuit, overload and against incorrect reverse polarity. USB port with the possibility of an external display.

<table>
<thead>
<tr>
<th>Hybrid Charge Controller Model</th>
<th>i/HCC - 800 / 12V-24V</th>
<th>i/HCC - 1000 / 24V</th>
<th>i/HCC - 1000 / 48V</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum input power wind turbine 3 phase AC</td>
<td>12-24 Vdc Automatic detection</td>
<td>24Vdc</td>
<td>48Vdc</td>
</tr>
<tr>
<td>Maximum input power PV module</td>
<td>750 Watt</td>
<td>1000 Watt</td>
<td>1000 Watt</td>
</tr>
<tr>
<td>Maximum input power PV module</td>
<td>300 Watt</td>
<td>300 Watt</td>
<td>300 Watt</td>
</tr>
<tr>
<td>Charging voltage Max. Wind</td>
<td>(12V = 14,6V) (24V = 29,2V)</td>
<td>(24V = 29,2V)</td>
<td>(48V = 59,6V)</td>
</tr>
<tr>
<td>Battery voltage minimum</td>
<td>(12V = 8,5V) (24V = 17,5V)</td>
<td>(24V = 17,5V)</td>
<td>(48V = 42V)</td>
</tr>
<tr>
<td>Brake Function</td>
<td>Electromagnetic short circuit, wind turbine is gradually braked to complete standstill.</td>
<td>At 12V = 14,6 At 24V = 29,2</td>
<td>At 24V = 29,2 At 48V = 59,6</td>
</tr>
<tr>
<td>Final charge voltages for the battery types</td>
<td>Acid, Gel</td>
<td>Acid, Gel</td>
<td>Acid, Gel</td>
</tr>
<tr>
<td>Thermally conductive housing</td>
<td>Anodized aluminum with cooling fins</td>
<td>Anodized aluminum with cooling fins</td>
<td>Anodized aluminum with cooling fins</td>
</tr>
<tr>
<td>Cable Termination</td>
<td>6mm screw terminals</td>
<td>6mm screw terminals</td>
<td>6mm screw terminals</td>
</tr>
<tr>
<td>Integrated manual stop switch</td>
<td>Maintenance</td>
<td>Maintenance</td>
<td>Maintenance</td>
</tr>
<tr>
<td>LCD display of all relevant operating data (Optional)</td>
<td>Amper, Watt, RPM, Battery voltage, Volts, Temperature</td>
<td>Amper, Watt, RPM, Battery voltage, Volts, Temperature</td>
<td>Amper, Watt, RPM, Battery voltage, Volts, Temperature</td>
</tr>
<tr>
<td>Temperature Compensation</td>
<td>-4mV/C/2V, -35 °C + 40°C, Accuracy +1°C</td>
<td>-4mV/C/2V, -35 °C + 40°C, Accuracy +1°C</td>
<td>-4mV/C/2V, -35 °C + 40°C, Accuracy +1°C</td>
</tr>
<tr>
<td>Sizes</td>
<td>150x170x70 mm</td>
<td>150x170x70 mm</td>
<td>150x170x70 mm</td>
</tr>
<tr>
<td>Weight</td>
<td>1.5 kg</td>
<td>1.7 kg</td>
<td>1.8 kg</td>
</tr>
</tbody>
</table>

**LEDS Display**

- **LED Yellow at**: System running
- **LED Yellow out**: System without electricity
- **LED Yellow flash**: System on (The charge controller is in charge mode)
- **LED Red at**: Fully charged battery
- **LED Red out**: Battery not fully charged
- **LED Red flashes**: 1 flash, battery disconnected or incorrect voltage. 2 flash, too high input voltage. 3 flash, excessive rotation of the turbine. 4 flash, high Temperature. Flashes constantly Wind turbine braked
5.1 Permissible operating and storage conditions

5.1.1 Storage
- Ambient temperature: -15 to +40°C
- Storage location: Dry, frost-free

5.1.2 Operation
- Ambient temperature: -25 to +40°C
- Place of use: Max. SWTS Class III acc. to EN 61400-2

6 - Safety Information -

6.1 Modifications or changes by the user
The wind turbine system is in conformity with the European Machinery Directive 2006/42/EC provided only original iSTA Breeze components are used and subject to proper erection. The use of components from other manufacturers as well as modifications or changes to the wind turbine system by the user are prohibited and could render the declaration of conformity invalid!

6.2 Residual risks
Any residual risks which arise as a result of operation or maintenance are described in the relevant sections of these instructions.

6.3 Personnel requirements
All work on the wind turbine system must be carried out by authorised persons! Such persons must be familiar with the safety devices and regulations prior to carrying out the work.

Authorised persons are defined as follows:

<table>
<thead>
<tr>
<th>Operating mode</th>
<th>Necessary qualifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Erection</td>
<td>Suitably trained persons</td>
</tr>
<tr>
<td>Normal operation</td>
<td>Trained personnel</td>
</tr>
<tr>
<td>Cleaning</td>
<td>Trained personnel</td>
</tr>
<tr>
<td>Maintenance</td>
<td>Suitably trained persons</td>
</tr>
<tr>
<td>Repair</td>
<td>Manufacturer</td>
</tr>
</tbody>
</table>

Table 8 Personnel requirements
7 - Preparing to use the System -

7.1 Shipping

7.1.1 As-delivered condition
The wind turbine system is shipped disassembled.

7.1.2 Scope of supply
Refer to the contract documentation for the scope of supply.

7.2 Requirements at the place of use

7.2.1 Permissible wind class, footprint and minimum clearances

![WARNING!]
Danger to life due to operation in non-approved wind classes!
▶ The wind turbine system may only be operated at Class III wind sites.

For information on local wind classes, please contact the responsible authorities or your nearest meteorological office.

![Footprint and minimum clearances]

Fig. 3: Footprint and minimum clearances
The place of use must be free of obstacles; alternatively, the wind turbine must be erected with a sufficient height (refer to Fig. 3). Obstacles are defined as houses, hedges, trees, hills, etc.

⚠️ When choosing the place of use, make sure adequate room is available to tilt the tower and blades if necessary.
7.2.2 Tower foundation

Fig. 4: Design of the foundation for erecting the tower

The soil must have a sufficient load-bearing capacity. The size and structure of the foundation depend on the soil characteristics.

Recommendation:
Ask a qualified structural engineer for advice regarding the optimal design of the foundation.

Fig. 5: Suitable guying system
7.3 Unpacking the components

- Carefully open the packaging.
- Check the shipment for completeness (refer to the shipping documents).
- Separate the packaging material and dispose of it in an environmentally responsible way.

7.4 Assembling the wind turbine

⚠️ WARNING!

Danger due to rotor imbalance!

- Always replace the complete set of rotor blades.

Risk of injury in case of assembly at windy sites!

- Choose an assembly site which is sheltered from the wind.
- The assembly process requires calm weather conditions.

Fig. 6: Assembling the wind turbine

- For installation, select sheltered place.
- Hold propeller blade (1) with flat side to hub (2).
- Fasten with a M8x45 bolt, nut and one.
- Screw on further M8x45 screws and tighten by hand.
- Attach boom rod (3) with M8x60 bolt to alternator housing.
- Screw nose (4) to hub with M8x75 screw.
- Screw wind vane (5) to boom with M8x60 bolt.
- Plug - in pin 37 mm as mast connection
Fig. 7: Balancing the rotor (Y position)

- Move rotor to Y position (see Fig. 7)
- Carefully release rotor blade.
- Observe in which direction the rotor turns (the heavier rotor blade pushes downwards).
- Repeat the process for all three positions to determine which rotor blade is in imbalance.
- Check repeller for balance
- Tighten all screws to 25 Nm.
- Check balance again.
- Secure all screws with locking varnish.

Note: The repellers have already been tested for equal weight by the manufacturer.

7.5 Electrical connections

⚠️ DANGER!

Danger: High voltage!
- All work on electrical equipment must be carried out by a qualified electrician with the power switched off!

Note: To ensure proper operation, you must use an original iSTA Breeze charge controller.

- Connect a three-wire cable with a suitable cross-section (refer to Table 9 / Table 10) and the required length to the generator.
- Make the electrical connections as shown in Fig. 1:
- Connect the charge controller and the transformer as shown in the connection diagram (refer to the relevant documentation).

<table>
<thead>
<tr>
<th>Distance between generator and charge controller [m]</th>
<th>&lt; 11</th>
<th>11 – 18</th>
<th>18 – 29</th>
<th>20 – 44</th>
<th>44 – 68</th>
<th>68 – 110</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cable cross-section [mm²]</td>
<td>2.5</td>
<td>4</td>
<td>6</td>
<td>10</td>
<td>16</td>
<td>25</td>
</tr>
</tbody>
</table>

Table 9 Cable cross-section with 24 V generator voltage

<table>
<thead>
<tr>
<th>Distance between generator and charge controller [m]</th>
<th>&lt; 11</th>
<th>11 – 18</th>
<th>18 – 29</th>
<th>20 – 44</th>
<th>44 – 70</th>
<th>68 – 113</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cable cross-section [mm²]</td>
<td>2.5</td>
<td>4</td>
<td>6</td>
<td>10</td>
<td>16</td>
<td>25</td>
</tr>
</tbody>
</table>

Table 10 Cable cross-section with 48 V generator voltage
Feed the three-wire cable through the tower right up to the top.
- Provide suitable strain relief.
- Connect the wires to the generator.

Attach the wind turbine to the tower. Be careful not to damage the cable.
- Bolt the wind turbine to the tower.
- Stand the tower upright.
- Align the tower vertically in all directions.
- Secure the vertical tower with guy wires (refer to Fig. 5:)
- Remove the short-circuit.

**Erecting the wind turbine**

**WARNING!**

Danger due to unsuitable tower constructions!
- Only use tested mast constructions or original iSTA Breeze masts.
8 - Normal Operation -

For information on operating the iSTA Breeze charge controller, refer to the separate instructions.

8.1 Switching on the wind turbine system

- Unlock the emergency stop button or release the brake button on the iSTA Breeze charge controller.
  - The brake is released.
  - The fast-blinking red LED on the iSTA Breeze charge controller goes out.
  - The wind turbine system supplies power.

8.2 Restart after an emergency

- Make sure the risk has been removed.
- Switch on the wind turbine system (→ section 7.1)

9 - Shutting down the Wind Turbine System -

9.1 Emergency shut-down

- Press the emergency stop button between the wind turbine and the charge controller.
  - The wind turbine is short-circuited via the iSTA Breeze charge controller.
  - The wind turbine is braked.

9.2 Temporary shut-down

- Press the “Charge controller OFF” button on the iSTA Breeze charge controller.
  - Operation is interrupted.

9.3 Prolonged shut-down

- Press the “Charge controller brake OFF” button on the iSTA Breeze charge controller.
  - The wind turbine is short-circuited via the iSTA Breeze charge controller.
  - The wind turbine is braked.
  - Carefully tilt the wind turbine.
  - Clean the wind turbine (→ section 9.3)
10 - Maintenance -

10.1 Safety precautions during maintenance work

⚠️ WARNING!
Risk of injury when carrying out maintenance work!
► Shut down the wind turbine system prior to all maintenance work.
► Take steps to prevent the wind turbine system from being switched on again by unauthorised persons.

► Shut down the wind turbine system (→ section 8.2).
► Carefully tilt the tower.

10.2 Inspection and maintenance schedule

<table>
<thead>
<tr>
<th>Interval</th>
<th>Part / component</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daily</td>
<td>Wind turbine</td>
<td>► Check for abnormal noises</td>
</tr>
<tr>
<td></td>
<td>Rotor blades</td>
<td>► Check that the blades turn freely</td>
</tr>
<tr>
<td></td>
<td>Tower</td>
<td>► Inspect for damage</td>
</tr>
<tr>
<td>Yearly 2 / at end of winter or after extreme weather events</td>
<td>Rotor blades</td>
<td>► Inspect for cracks / damage and if necessary replace ► Treat with underbody protection wax ► Are the rotor blades balanced?</td>
</tr>
<tr>
<td></td>
<td>Tower</td>
<td>► Check for vibration</td>
</tr>
<tr>
<td></td>
<td></td>
<td>► Check the guy wires</td>
</tr>
<tr>
<td></td>
<td></td>
<td>► Is the tower still aligned vertically?</td>
</tr>
<tr>
<td></td>
<td></td>
<td>► Inspect for damage</td>
</tr>
<tr>
<td></td>
<td>Wind turbine</td>
<td>► Check the bolts</td>
</tr>
<tr>
<td></td>
<td>Electrical wiring</td>
<td>► Inspect the cables for damage</td>
</tr>
</tbody>
</table>

Table 11/Inspection and maintenance schedule

⚠️ WARNING!
Danger due to damaged parts!
► Shut down the wind turbine system immediately if the rotor blades or the electrical wiring are damaged.

Refer to the supplementary documents for information on maintaining supplier components.

10.3 Maintenance and cleaning by the user

► Coat the wind turbine and the rotor blades regularly with commercially available underbody protection wax using a soft cloth.

☐ A wax film protects the surfaces of the wind turbine and the rotor blades from the weather and increases the efficiency of the blades.

2 Or every 6 months if situated close to sea
11 - Troubleshooting and Diagnostics -

11.1 Errors with LED

Error messages are displayed on the iSTA Breeze charge controller. Refer to the separate instructions.

11.2 Errors without LED

<table>
<thead>
<tr>
<th>Error</th>
<th>Possible cause</th>
<th>Possible actions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wind turbine does not start up</td>
<td>Not enough wind</td>
<td>► None</td>
</tr>
<tr>
<td></td>
<td>“Stop” switch pressed</td>
<td>► Release the “Stop” switch</td>
</tr>
<tr>
<td>Rotor turns too slowly</td>
<td>Rotor blades incorrectly attached</td>
<td>► Attach the rotor blades correctly</td>
</tr>
<tr>
<td></td>
<td>Rotor blades not balanced</td>
<td>► Balance the rotor blades</td>
</tr>
<tr>
<td></td>
<td>Bearing for wind alignment is stiff</td>
<td>► Replace the bearing</td>
</tr>
<tr>
<td></td>
<td>Generator makes contact as it turns</td>
<td>► Send the generator in to the manufacturer</td>
</tr>
</tbody>
</table>
| | Unfavourable location or tower too low | ► Check and move to another location if necessary
| | ► Increase the height of the tower |
| Wind turbine vibrates on tower | Rotor not balanced | ► Balance the rotor |
| | Tower not aligned vertically | ► Align the tower vertically |
| | Tower bends in the wind | ► Design a more robust tower |
| | Tower foundation has too much clearance | ► Reduce the clearance to a minimum |
| Wind turbine system produces too little power | Wind turbine or charge controller defective | ► Contact the manufacturer or a specialist dealer |
| | Battery defective | ► Replace the battery |
| | Battery too small | ► Use a larger battery (at least 100 Ah) |
| | Battery fuse tripped | ► Replace the fuse
| | ► Check the electrical connections |
| | Cable cross-section does not match installed cable length | ► Match the cable cross-section correctly |

Table 12 Errors without an LED

Recommendation:
Make a note of the relevant parameters at the site and have them handy when you contact the manufacturer / specialist dealer.

1. What is the average / typical wind speed?
2. How high is the tower?
3. What are the characteristics of the countryside / built-up area in the vicinity of the wind turbine?
4. What is the voltage between phases (measured by a qualified electrician – this voltage should be roughly identical in identical wind conditions)?
5. What is the battery voltage? How old is the battery or batteries?
6. Which loads are connected to the battery?
7. Are solar panels also connected to the charge controller? If so:
   a. What is the no-load voltage [VDC]?
   b. What is the power [Wp]?

3 Measured with no loads connected
12 - Removal from Service and Disposal -

12.1 Final decommissioning of the wind turbine system

⚠️ WARNING!

Risk of injury due to unqualified dismantling, e.g.

- Persons without suitable training
- Stored energy
- Breakage during dismantling

Important note on dismantling and disposal:

- The system must be dismantled in the proper way by a suitably qualified person.

- Shut down the wind turbine system (→ section 8).
- Have the electrical systems and equipment removed from service by a qualified electrician.
- Make sure all rotors are braked.
- Carefully tilt the tower.
- On the ground: Detach the rotor blades from the generator.
- Detach the generator from the tower and disconnect the electrical wiring.

12.2 Disposal of the wind turbine system and components

Where necessary, dispose of the individual components in consultation with the responsible local authorities.

<table>
<thead>
<tr>
<th>Wind turbine system</th>
<th>Disposal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wiring, electrical components</td>
<td>Dispose of as electronic scrap</td>
</tr>
<tr>
<td>Mechanical components</td>
<td>Segregate prior to disposal</td>
</tr>
</tbody>
</table>

*Table 13 Disposal*
- Declaration of Conformity -

EarthSafe

EC / EU Declaration of Conformity (Translation)
as defined by the Directives
2006/42/EC and 2014/30/EU

The manufacturer:
ALTINEL ENERJI DIS TIC. ELEK. ELEKTRONIK SAN. VE TIC. LTD. STI
Memreclilar Sanayi Sitesi Merkezi 4 Cadde 3, TR – Beylikdüzü / Istanbul

declares under its own responsibility that the following product:
Product: Wind turbine system
Type designation: 12 V - 200 W to 48 V - 4000 W
Serial No.: From date of signature

is in conformity with all provisions of the following EC / EU Directives:


The following harmonised standards were applied:
EN 61000-6-1: 2007-10 Electromagnetic compatibility (EMC) – Immunity standard for residential, commercial and light-industrial environments
EN 61000-6-3: 2011-09 Electromagnetic compatibility (EMC) – Emission standard for residential, commercial and light-industrial environments

AC I: 2012-11

Name and address of the authorised representative:
Serkan ÜRÜT, ISTA Breeze Riemensstr. 31, D-74906 Bad Rappenau

Beylikdüzü / Istanbul, 17/02/2017

Place, date

Erkan ÜRÜT
Managing Director

Fig. 9: Declaration of conformity
<table>
<thead>
<tr>
<th>A</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adapter stud</td>
<td>Place of use</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Battery</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>R</td>
</tr>
<tr>
<td>Cable cross-section</td>
<td>Rotor blade</td>
</tr>
<tr>
<td>Charge controller</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>F</td>
<td>S</td>
</tr>
<tr>
<td>Foundation</td>
<td>Strain relief</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>L</td>
<td>T</td>
</tr>
<tr>
<td>Load</td>
<td>Tail vane</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>M</td>
<td>W</td>
</tr>
<tr>
<td>Main components</td>
<td>Wind classes</td>
</tr>
</tbody>
</table>

**Index**

- Adapter stud: 8
- Battery: 7, 10, 19, 20
- Cable cross-section: 15, 19
- Charge controller: 7, 10, 15, 17, 19, 20
- Foundation: 13, 19
- Load: 10, 13, 20
- Main components: 7, 8
- Place of use: 11, 12
- Rotor blade: 8, 9, 14, 15, 18, 19, 21
- Strain relief: 16
- Tail vane: 8
- Transformer: 15
- Wind classes: 12
- Performance Charts -

**i-700 Performance Curve**

**i-1000 Performance Curve**
United States of America
United States Patent and Trademark Office

ISTABREEZE

Reg. No. 5,046,708
Registered Sep. 20, 2016
Int. Cl.: 7, 9
Trademark
Principal Register

Altinoenerji Ltd. (TURKEY LIMITED LIABILITY COMPANY)
4 cadd. kav03
Memreciler San. Sıt. Laleli is merkezi,
Istanbul-Beylikdüzü TURKEY 34524

CLASS 7: Wind turbines, windmills, wind-powered electricity generators, propellers for wind-powered electricity generators
FIRST USE 4-11-2013; IN COMMERCE 4-11-2013

CLASS 9: Electrical transformers, current rectifiers, electrical controllers, wind turbine controllers
FIRST USE 4-11-2013; IN COMMERCE 4-11-2013

THE MARK CONSISTS OF STANDARD CHARACTERS WITHOUT CLAIM TO ANY PARTICULAR FONT STYLE, SIZE OR COLOR
SER. NO. 86-696,244, FILED 07-17-2015
KRISTIN M DAHLING, EXAMINING ATTORNEY

Director of the United States Patent and Trademark Office
QUALITY MANAGEMENT SYSTEM
CERTIFICATE

Universal GmbH
Certification Services

This certificate is granted to the organization,

Altinel Enerji Dis Ticaret Elektrik Elektronik

Beylikduzu Osb. Mahallesi 7.Cadde No: 8/2 Beylikduzu/Istanbul/Turkey

by review of IA2.007635 numbered report for the scope

Production and Sales of Wind Turbines, Solar Panels, Controllers and Their Spare Parts

to certify that a quality management system in accordance with standard's clauses is established and being implemented

DIN EN ISO 9001:2015

Certificate No : QMS 0118 007835
Original Certification Date : 2018 - 01 - 17
Issue / Revised Date : 2018 - 01 - 17
Expiry Date : 2019 - 01 - 16
Certificate Period : 3 Years (1st Year)

DAkkS
Deutsche Akkreditierungsstelle
D-ZM-16058-01-00

Universal GmbH

The authenticity of this certificate can be confirmed online or by e-mail to the Head Office via:
UNIVERSAL GmbH • Wiltho-Diekmann-Str. 20b 44538 Lünen Germany • T: +49 (0)231 9931 9960 • info@uni-cert.de • www.uni-cert.de
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SAVE PLANET