

Save your pool !

Otomatik pH/ORP Kontrol Cihazı  
Automatic pH/ORP Controller

# KULLANIM KILAVUZU

## USER'S MANUEL



Anitech

POOLSAVER TETRA

# Antech<sup>®</sup>



[www.antech.com.tr](http://www.antech.com.tr)






**Please read this user manual completely. Do not throw.  
Damages resulting from usage errors are not covered by warranty.**


|                                                        |           |
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## 1. General User Information

Please read the following information carefully and completely. This information will allow the user to ensure maximum benefit from instructions for use.

|                                                                                   |                                                                                                                                                               |
|-----------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <b>WARNING</b><br>This sign is used for situations where there is potential risk. Ignoring this sign may cause directly life-threatening or serious injuries. |
|  | <b>CAUTION</b><br>This sign is used for situations where there is potential risk. Ignoring this sign may cause serious injuries or damaging of the product.   |
|  | <b>IMPORTANT</b><br>This sign is used for potential damages. Ignoring this sign may cause damaging of the product.                                            |

## SECURITY INFORMATION

|                                                                                     |                                                                                                                                                                             |
|-------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <b>CAUTION</b><br>Electrodes must be calibrate/control periodically because the accurate measurement and dosing is possible only when the electrodes are working perfectly. |
|-------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## 2. Description and Properties

### 2.1. Description

**POOLSAVER Tetra** is an automatic measurement and control device, developed for special requirements of swimming pools. It is used for measurement, display and control of pH and ORP parameters

### 2.2. General Properties

- Designed by researching pool control rooms and considering all conditions.
- pH and ORP set values and calibration can be adjusted via display and buttons.
- Two liquid level sensor input is available for each channel.
- Completely microprocessor technology is used.
- Keeps pool water at desired values.

### 2.3. Mechanical Design

The device has been designed for mounting to wall or on a plastic panel. The plastic device box has upper and lower parts. Electronic cards of display and keypad has been mounted on upper part of the box. There is another card at lower part containing power supply, microprocessor and pre-amp circuit. The connection between main electronic card and display is done with a flat cable. Cable records are used for all electric connections. So the electric connection isolated for any user. For electrode connection, BNC sockets are used which are mounted on the right side of the box. Four hanging pieces are put behind the device box to mount the device to wall.

### 2.4. Electrical Design

Device operates the input signals by considering user settings. It shows the results on screen and controls dosing pumps.

Device does not require other power switch. After making electrical connection, the device is ready for immediate use.

Poolsaver *Tetra* complies with the following European regulations.

Electrical Security : TS EN 60950-1 / EN 60950-1(2001)  
: TS 3033 / EN60529

Electromagnetic compatibility : TS 3327 EN 55011:1995 / EN55011:1998+A1:1999+A2:2002

## 2.5. Technical Properties

| POOLSAVER Technical Properties |                             |                |
|--------------------------------|-----------------------------|----------------|
|                                | pH                          | ORP            |
| Ambient Temperature Range      | 0-50 °C                     |                |
| Measurement Range              | 00,00 – 14,00 pH            | 0000 – 1600 mV |
| Resolution                     | 0,01 pH                     | 1 mV           |
| Accuracy                       | % 0,5 of input interval     |                |
| Measure Input                  | Standard BNC terminal       |                |
| Liquid Level Sensor Input      | Standard BNC terminal       |                |
| Power Supply                   | 220V 50Hz AC                |                |
| Outputs                        | 220V 2.5A (5A maximum) Role |                |
| Power Consume                  | 3,2 W                       |                |
| Box                            | 0-50 °C                     |                |
| Screen                         | IP65 *                      |                |
| Dimensions                     | 7 Segment LED Display       |                |
| Weight                         | 210 x 234 x 85 mm           |                |
| Measurement Range              | ~1 Kg                       |                |

\* : When all cables are connected and all covers and cable records are closed.



### **WARNING**

Keep device cover closed while working.



1. 7 Segment Led Display
2. Mode Display
3. Set / Calibration Display
4. Output Display
5. Buttons
6. 220 V AC input cable record (PG11)
7. pH output cable record (PG11)
8. ORP output cable record (PG11)
9. pH Electrode input (BNC)
10. ORP Electrode input (BNC)
11. Liquid level sensor input for pH channel (BNC)
12. Liquid level sensor input for ORP channel (BNC)
13. Screw

## 3. Installation

### SECURITY INFORMATION



#### CAUTION

- The device must not be wet or humid. It must not be used in open area without any protector (external box, cover to avoid rain etc.).



#### ATTENTION

- General security precautions must be applied for installation.
- User guide must be read completely before installation or startup.
- Electrical connection must be made only by trained personnel.
- The electrical values on the device must be in accordance with the electric supply.
- Power input cable and electrode input cable must not be passed around noisy lines. If low electrical noise is not guaranteed in work area, special noise suppression precautions must be taken. These may cause function disabilities or damages in devices.

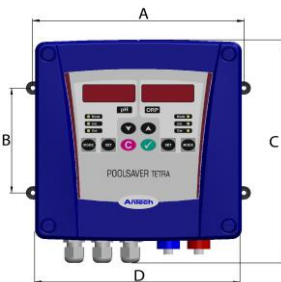
### 3.1. Montage



#### NOTE

- The device must be installed in a suitable position for easy read and use (if possible, at eye level)

The device can be mounted to a wall or panel with 4 pieces of wall plug and screw.



A : 210 mm

B : 110 mm

C : 234 mm

D : 204 mm

Ø : 4,5 mm

#### Montage to wall

Materials:

- 4 pieces of 4x45 Round Cylinder Head screws
- 4 pieces of 8mm Wall Plug

4 pieces of 8mm holes are opened to the wall in the dimensions of A and B. The wall plugs are driven into wall, the device is fixed to the wall by using screws.



## Montage on Plastic Panel

Materials:

- 4 pieces of 4x13 Round Cylinder Head screws
- 4 pieces of 2mm holes are opened to the panel in the dimensions of A and B. The device is fixed to the panel by using screws and washers.

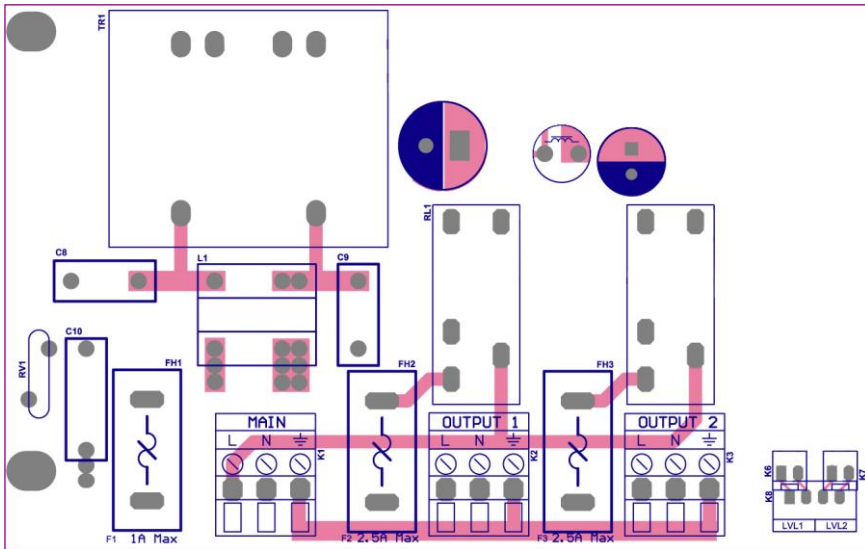
## 3.2. Electrical Connection



### **WARNING**

- Electrical connection must not be done before device montage!
- Electrical connection must be shut down before demounting the device.

- The device must be opened by trained people.
- Required precautions must be taken not to give energy to the device during service.
- The device must be opened only after mounting to wall or panel.
- To open the cover of the device, 4 pieces of plastic screws must be opened in the corners.
- The upper part of the device is connected with a flat cable to the lower part. This flat cable is taken from its socket and upper part with lower part is separated.
- Electrical connections are only in the lower part. No connection will be done in the upper part.
- There are 3 pieces of terminals from left to right side in the lower part.
- Power input cable and dosing pump energy cables are got through the cable records which are on the lower part and squeezed.
- The cables are connected to the signs in front of the terminals by using screwdriver.



### 3.3. Electrode Choice

Standard pH, ORP and liquid level sensors are used with the device. The connections are made with BNC connectors. It is indicated on the device which electrode and which sensor would be connected to which part.

## 4. Usage

**POOLSAVER Tetra** has 2 different 7 Segment Led display. All the values and operations can be seen on these displays. Set values are changed by using the buttons on the screen. Also, the leds under the screen give information about which operation is being done.

### 4.1. Leds and Descriptions

| Led         | Leds                         |                                  |                                                                                                                       |
|-------------|------------------------------|----------------------------------|-----------------------------------------------------------------------------------------------------------------------|
|             | If they are burning          | If they are off                  | If they are twinkling                                                                                                 |
| <b>Mode</b> | The pump is running.         | The pump does not work           | The pump runs automatically according to the comparison of set values and the values read by <b>POOLSAVER Tetra</b> . |
| <b>Cal.</b> | The device is on set mode.   |                                  | The device is on calibration mode.                                                                                    |
| <b>Out</b>  | Energy is given to the pump. | Energy is not given to the pump. |                                                                                                                       |

## 4.2. Mode Setting

There are 2 **MODE** buttons on control panel. Each one makes settings of the pumps on its own side. There are 3 different modes.



**STOP** : The pump does not work

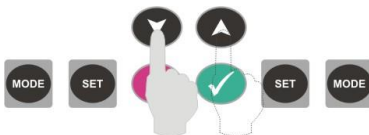
**AUTO** : The pump runs automatically according to the comparison of set values and the values read by **POOLSAVER Tetra**.

**RUN** : The pump always runs.

## 4.3. Set Value Settings



To adjust set value, press SET button.



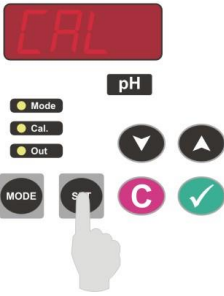
By using upper▲ and lower▼ buttons set value is adjusted.



By pressing ✓ button, you can return to main screen.

During these processes, the other screen does not work.

## 4.4. Electrode Calibration



Press SET button of the suitable side of the device (ph or orp side, where you will make calibration) until seeing CAL message on the screen. (Before starting calibration, 1. and 2. Buffer solutions must be adjusted from parameters due to the buffer solutions that you have.)



First buffer solution value is seen on the screen for a while and the device shows the electrode value which has not been calibrated yet. At this time, electrode must be immersed in the 1. buffer solution.

Wait until value change stops and then press ✓ button.

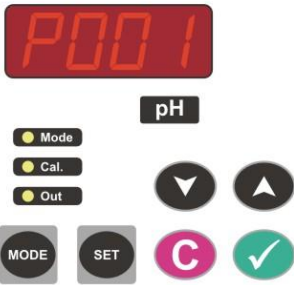


This time, the device shows 2. buffer solution value for a while and the device shows the electrode value which has not been calibrated yet again. At this time, electrode must be immersed in the 2. buffer solution.

Wait until value change stops and then press ✓ button.

After these operations, your device is calibrated. The device starts to show the normal ph and ORP values. These must be done for both ph and ORP separately.

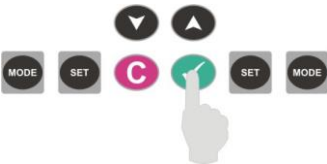
## 4.5. Parameter Settings



Press **MODE** button in the side where parameter will be changed until seeing **P001** message on the screen.



By using upper▲ and lower▼ buttons, the parameter is selected which will be changed.



With✓ button, the parameter value is entered on the screen.



By using upper▲ and lower▼ buttons, the parameter value is adjusted.



With✓ button, the parameter is recorded and you can return to parameter menu. Press **C** button without recording.



To return to main screen, use **C** button.

## 4.6. Parameters

| Par. No | Name             | Description                                                                                          | Value                    |
|---------|------------------|------------------------------------------------------------------------------------------------------|--------------------------|
| P001    | Set_Offset       | Set offset value for control                                                                         | 0-100                    |
| P002    | Ratio_Diff       | Proportional control difference setting                                                              | 0-250                    |
| P003    | Buf_Sol_1        | 1. Buffer Solution                                                                                   | 0-1000 ORP<br>0-14,00 pH |
| P004    | Buf_Sol_2        | 2. Buffer Solution                                                                                   | 0-1000 ORP<br>0-14,00 pH |
| P005    | Control_Mode     | Control Mode<br>0: Relay Boost<br>1: Relay Reduce<br>2: Proportional Boost<br>3: Proportional Reduce | 0-3                      |
| P006    | Password         | Password (if the value is 0, password is cancelled.)                                                 | 0-999                    |
| P007    | Disable Run Mode | 0: Run Mode is active for 1 minute<br>1: Run Mod is always active                                    | 0-1                      |
| P008    | Limit Low        | Low Limit Value                                                                                      | 0-14,00 pH<br>0-1600 ORP |
| P009    | Limit High       | High Limit Value                                                                                     | 0-14,00 pH<br>0-1600 ORP |
| P010    | Startup_Delay    | Startup Delay                                                                                        | 0-60 (min.)              |
| P011    | TimeOut          | Timeout formed while reaching set value.                                                             | 0-360 (min.)             |
| P012    | SensType         | Liquid level sensor operation mode setting parameter;<br>0: Normally open<br>1: Normally close       | 0-1                      |

## 4.7. Output Control Mode

It is adjusted due to Control Mode (P005) parameter. Parameter modes and descriptions are shown below.

|   | Cont. Mode | Output                                                                                                                                                                                                |
|---|------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | 0          | The value read gives out until passing ( <b>Set + Offset</b> ) value. When it passes, it shuts out, waits until dropping under ( <b>Set – Offset</b> ) value again.                                   |
| 2 | 1          | The value read gives out until dropping under ( <b>Set – Offset</b> ) value. When it drops, it shuts out, waits until passing ( <b>Set + Offset</b> ) value again.                                    |
| 3 | 2          | The value read gives always out if it is under ( <b>Set-Ratio_Diff</b> ) value. It gives proportional out until it passes ( <b>Set</b> ) value. It does not give out above ( <b>Set</b> ) value.      |
| 4 | 3          | The value read gives always out if it is above ( <b>Set+Ratio_Diff</b> ) value. It gives proportional out until it drops under ( <b>Set</b> ) value. It does not give out under ( <b>Set</b> ) value. |

## 4.8. Proportional Control

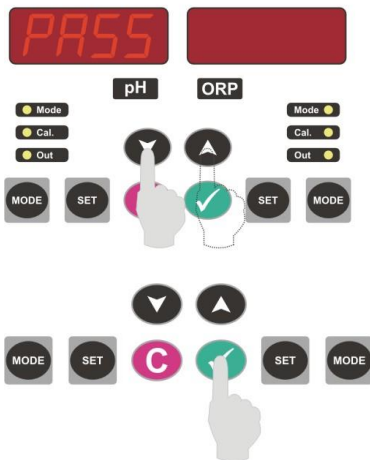
As the value which is read approaches to set value, the output is restricted and it provides softer control. This restriction operation is done by opening or closing the relay depending on time. For example; when the ratio is 100%, the pump always runs. When it is 50%, it runs for 30 seconds and it stops for 30 seconds. When it is 10%, it runs for 6 seconds and it stops for 54 seconds.

## 4.9. RUN Mode Cancel Function

If **P007** is adjusted to "0", 1 minute after the device is taken to RUN mode, it will return to AUTO mode. If it is desired to be used always on RUN mode, **P007** must be adjusted to "1".

## 4.10. Password Usage

If password parameter (P006) is adjusted different from 0, password protection will be activated. If password protection is activated, the device asks password after waiting for a while.



When you see this screen, the password is adjusted by using ▲ and ▼ buttons and press ✓ buttons.

If the password is true, then the lock will open.

If the password is forgotten, press ▲ and ▼ buttons at the same time until seeing "rStP" message on the screen. Then press C button for a while, in 3 seconds the same message is seen again and the password is reset.

## 4.11. Warning and Failure Notifications

The device has some special warning and failure notifications to protect the system from potential failures.

## 4.11.1. rLO (RangeL) Notifications

If the measured value is under the measurement limit of the device, this warning will be seen on the screen. This value is under 0.00pH for pH channel and under 0000mV for ORP channel. Until the failure is fixed, the channel having alarm does not give output. Control electrode calibration. If the failure does not depend on this, please apply to technical service.

## 4.11.2. rHI (RangeH) Notifications

If the measured value is above the measurement limit of the device, this warning will be seen on the screen. This value is above 14.00pH for pH channel and above 1600mV for ORP channel. Until the failure is fixed, the channel having alarm does not give output. Control electrode calibration. If the failure does not depend on this, please apply to technical service.

## 4.11.3. LL (Level) Notifications

This is liquid level failure. This warning only becomes active when liquid level sensor is used. It shows that dosing liquid of the channel finished. Until the failure is fixed, the channel having alarm does not give output. **1.** Complete dosing liquid if it decreases. **2.** Control the sensor. If the failure does not depend on this, please apply to technical service.

## 4.11.4. ErC (Timeout) Notifications

If the value which is read does not reach to set value determined by **P011** Timeout parameter, this warning will be seen on the screen. The user can enter a value between 0 and 360 minutes. This usually occurs when system recycling time is long. Until the failure is fixed, the channel having alarm does not give output. **1.** Control electrode calibration. **2.** Enter the value from the parameter due to system recycling time. If the time is not still enough, you can deactivate it by making the value of **P011** parameter “0”.

## 4.11.5. LLO (Limit Low) Notifications

If the measured value is under P008 low limit parameter value, this warning will be seen on the screen. The values that have not entered in suitable interval may cause this warning to occur. Until the failure is fixed, the channel having alarm does not give output. **1.** Define the low limit to the parameter which is suitable for system. **2.** Control electrode calibration. If the failure does not depend on this, please apply to technical service.

## 4.11.6. LHI (Limit High) Notifications

If the measured value is under P009 high limit parameter value, this warning will be seen on the screen. The values that have not entered in suitable interval may cause this warning to occur. Until the failure is fixed, the channel having alarm does not give output. **1.** Define the high limit to the parameter which is suitable for system. **2.** Control electrode calibration. If the failure does not depend on this, please apply to technical service.



## 4.11.7. t0 (WDT) Notifications

Watchdog Timer failure is a system failure.

## 4.11.8. SdLy (Startup Delay) Notifications

The device does not give output at startup level during the period which has been determined at **P010** Startup Delay parameter. When the time is over, it starts to run automatically. *(If the mode is auto)* if it is desired the device to work without waiting startup delay, a button can be pressed. The device starts to control the output depending on set value.

## 5. Service



### WARNING

- Before making any service operation to your device, electrical connection must be shut down.
- The safety nets must be changed with any other safety nets with suitable values.
- 5x20 mm mini glass safety net must be used.

## 5.1. Failures

1. **No view on screen and leds do not burn.**  
Control circuit safety net in connector cover (on the left leading) and electrical connection. Be sure that electricity is 220V 50 Hz AC.
2. **The device runs normally but even the leds are burning pumps do not have electricity.**  
Control the output safety nets in connector cover.
3. **The value seems abnormal or "0" at pH or ORP dashboards.**  
Control electrode connection points and cables.
4. **Even electrode calibration is done, wrong values are seen on the screen.**  
Change the electrodes with the new ones and calibrate again.
5. **If the failure is out of these failures,**  
Apply to the authorized technical service.

## 5.2 Warning and Failure Notifications Table

| Screen      | Definition    | Description                                                                                                                                                                                 |
|-------------|---------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>rLO</b>  | RangeL        | The measured value is under the device measurement limits.                                                                                                                                  |
| <b>rHI</b>  | RangeH        | The measured value is above the device measurement limits.                                                                                                                                  |
| <b>LL</b>   | Level         | Liquid level failure.                                                                                                                                                                       |
| <b>ErC</b>  | Timeout       | If the value which is read do not reach set value in the desired time determined with Timeout parameter, this warning will be seen. It usually occurs when the system recycle time is long. |
| <b>LLO</b>  | Limit Low     | The value which is read is under the value determined by low limit parameter. Relay does not give out.                                                                                      |
| <b>LHI</b>  | Limit High    | The value which is read is above the value determined by high limit parameter. Relay does not give out.                                                                                     |
| <b>t0</b>   | WDT           | Watchdog Timer Failure                                                                                                                                                                      |
| <b>SdLy</b> | Startup Delay | It does not give out at startup during the period determined at startup delay parameter.                                                                                                    |

## 6. Guarantee

### 6.1. Guarantee

- **POOLSAVER Tetra** has 2-year warranty for the materials and production errors on the legal obligations.
- Damages depending on normal wear and tear, overload or irregular usage are not covered under warranty procedure.
- Damages depending on materials and production errors will be compensated by repairing or giving the defective parts, or the device itself.
- Demands concerning the warranty will be accepted if the device is brought to supplier or authorized service by dismantling.



#### NOTE

- Warranty Certificate must be completed and approved by the dealer where you purchased the device. Please keep this document approved.

## 7. Standards

The device is conformable to TS 3033 EN 60529 IP-55 standard when installed.

Regulation of low-voltage devices (73/23/EEC)

Regulation of electromagnetic compatibility (89/336/EEC)

|                                                                                   |                                                                            |
|-----------------------------------------------------------------------------------|----------------------------------------------------------------------------|
| EN 60950-1                                                                        | Information technology equipment electrical safety                         |
| TS EN55011:1995<br>EN 55011:1998+A1:1999+A2:2002<br>CISPR 11:1997+A1:1997+A2:2002 | Electromagnetic compatibility                                              |
| EN 61000-6-1                                                                      | Residential, commercial and light industrial environment immunity standard |
| EN 61000-6-2                                                                      | Immunity for industrial environments                                       |
| EN 61000-6-3                                                                      | Residential, commercial and light industrial environment emission standard |
| EN 61000-6-4                                                                      | Emission standard for industrial environments                              |

# GARANTİ BELGESİ

## Garanti Şartları

1. Garanti süresi, malın teslim tarihinden itibaren başlar ve iki yıldır.
2. Malın kullanım ömrü 10 yıldır.
3. Malın bütün parçaları dahil olmak üzere tamamını firmamızın garantisine kapsamındadır.
4. Malın garanti süresi içerisinde arızalanması durumunda, tamirde geçen süre garanti süresine eklenir. Malın tamir süresi en fazla 30 iş gündür. Bu süre, mala ilişkin arızanın servisi istasyonuna, servis istasyonunun olmaması durumunda, malın satıcısı, bayi, acentesi, temsilcisi, ithalatçısı veya imalatçısı-üreticisinden birine bildirim tarihinden itibaren başlar. Malın arızasını 15 iş günü içerisinde giderilememesi halinde imalatçı-üretici veya ithalatçı malın tamiri tamamlanmaya kadar, benzer özelliklere sahip başka bir malı tüketicinin kullanımına tahsis etmek durumundadır.
5. Malın garanti süresi içerisinde gerek malzeme ve işçilik, gerekse montaj hatalarından dolayı arızalanması halinde, işçilik masrafı, değiştirilen parça bedeli ya da bakla herhangi bir ad altında hiçbir ücret talep etmeksizin tamiri yapılacaktır.
6. Tüketicinin onarım hakkını kullanmasına rağmen malın aşağıdaki durumlarda tüketici, malın ücretsiz değiştirilmesini, bedel iadesi veya ayıp oranında bedel indirimini talep edebilir.
  - a. Tüketicije teslim edildiği tarihten itibaren, belirlenen garanti süresi içinde karnak kaydıyla, bir yıl içerisinde, aynı arızanın ikiden fazla tekrarlanması veya farklı arızaların dörtten fazla meydana gelmesi veya belirlenen garanti süresi içerisinde farklı arızaların toplamı altıdan fazla olması unsurlarının yamı sıra, bu arızaların maldan yaralanamamayı süreceği kılması,
  - b. Tamiri için geçen azami sürenin aşılması,
  - c. Firmamız servisi istasyonuna, servisi istasyonunun olmaması durumunda, malın satıcısı, bayi, acentesi, temsilcisi, ithalatçısı veya imalatçısı-üreticisinden birisinin düzenleyeceği raporda arızanın tamirinin mümkün bulunmadığını belirlenmesi,
7. Aşağıdaki arızalar garanti kapsamı dışıdır.
  - a. Kullanım kılavuzunun dikkate alınmaması sonucu üritide meydana gelen ayıplar, kullanım amacına uygun olmayan kullanımı, anormal çevre şartları, uygunsuz işletme şartları, aşırı zorlama, eksik bakım ve korumaya bağlı arızalar.
  - b. Kullanıma bağlı veya muhtelif doğal aşınmaya tabii olan parçaların ayrıca üritideki kullanımına bağlı diğer doğal aşınma sonucu oluşan arızalar.
  - c. Yetkili firma personeli dışında birisi müdahale etmiş ise, garanti belgesi eksik doldürülüşü ya da yoksa.
8. Garanti belgesi ile ilgili çıkabilecek sorunlar için Sanayi ve Ticaret Bakanlığı Tüketicinin ve Rekabetin Korunması Genel Müdürlüğü'ne başvurulabilir.

### Üretici Firma

|                       |   |                                                                           |
|-----------------------|---|---------------------------------------------------------------------------|
| Ünvanı                | : | EN-EL-SA END.ELK.İNŞ.TAĖ.SAN.TİC.LTD.STİ                                  |
| Merkez Adresi         | : | Antalya Organize Sanayi Bölgesi, 1.Kısım<br>6.Cadde No:16 Antalya/TURKIYE |
| Telefon               | : | +90 242 258 12 84                                                         |
| Fax                   | : | +90 242 258 12 85                                                         |
| Firma Yetkilisi       | : |                                                                           |
| Cinsi                 | : |                                                                           |
| Modeli                | : |                                                                           |
| Bandrolü Ve Seri No   | : |                                                                           |
| Teslim Tarihi Ve Yeri | : |                                                                           |

### Yetkili Teknik Servis & Yedek Parça Temin

|               |   |                                                                      |
|---------------|---|----------------------------------------------------------------------|
| Ünvanı        | : | EN-EL-SA END.ELK.İNŞ.TAĖ.SAN.TİC.LTD.STİ                             |
| Merkez Adresi | : | Güvenlik Mh. Gazi Bul. 100A Mehmet Demirkaya Apt.<br>Antalya/TURKIYE |
| Telefon       | : | +90 242 221 64 31                                                    |
| Fax           | : | +90 242 221 64 32                                                    |

### Satıcı Firma

|               |   |  |
|---------------|---|--|
| Ünvanı        | : |  |
| Adresi        | : |  |
| Telefon       | : |  |
| Fax           | : |  |
| Fatura Tarihi | : |  |
| Fatura No     | : |  |

Tarih - İmza - Kaşe