

ATEQ AX6000



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REVISIONS OF THE ATEQ AX6000 USER MANUAL

Due to continuing improvements, the information contained in this user manual, the features and design of this device are subject to be changed without prior notice.

<u>Edition/Revision</u>	<u>Reference</u>	<u>Date</u> Week/Year	<u>Chapters up dating</u>
First edition	UM-30300B-U	40/2009	Indices B to be the same as the French version.
Second edition	UM-30300C-U	37/2011	General update following device evolution. Program upgrade to the 2.0 version. Add 3A current ranges option.
Third edition	UM-30300D-U	07/2013	Characteristics measurement update. Sequences process update. Device firmware version 3.0.
Fourth edition	UM-30300E-U	37/2014	Updating safety conditions in appendices.
Fifth edition	UM-30300F-U	46/2017	Updating the UE certificate. Update front face pictures.

UE CONFORMITY DECLARATION

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We the undersigned, ATEQ, manufacturers of the automatic charger **ATEQ AX6000** REF: **303.00** declare that it complies with the requirements of:

- LOW VOLTAGE Directive 2014/35/UE.
- EMC Directive 2014/30/CE.

It complies with standards:

- Standard NF EN 61326-1 May 2013: « Electrical equipment for measurement, control and laboratory use - EMC requirements - Part 1: general requirements. »,
- Standard NF EN 62311 October 2008: « Assessment of electronic and electrical equipment related to human exposure restrictions for electromagnetic fields (0 Hz - 300 GHz). »

This enables **ATEQ** to guarantee that this instrument may be used in complete safety under the following environmental conditions:

- indoor use (IP22),
- altitude up to 2000 metres,
- ambient operating temperature from -30°C to +50°C (-22°F to 122°F),
- maximum relative humidity without condensation: 80% (at 30°C / 86°F),
- degree of pollution 2 as in CEI 664 (only non-conductive pollution, however a temporary conductivity caused by condensation may occasionally be expected).



Les Clayes sous bois, november, 13 - 2017
Chairman and Managing Director
Mr. Jacques MOUCHET

A handwritten signature in black ink, appearing to read 'Jacques Mouchet'.

Recommendations for electrical testing instruments

Precautions on the test environment

- Let the test area dry and clean, free from explosive gas.

Precautions on the operators

- ATEQ recommends that the operators using the instruments should have a suitable qualification and training with respect to the work bench requirements.

General precautions

- Read the users manual before using the instrument,
- all electrical connections coming to the instrument must be equipped with a safety system (fuse, circuit breaker...) adapted to the needs and adhering to the norms,
- to avoid electromagnetic interference, the cable connections to the instrument should be less than two meters in length,
- the electrical main supply must absolutely have proper connection to the earth,
- disconnect the electrical connections to the equipment for maintenance,
- do not open the instrument under power voltage,
- avoid water spillage in the direction of the instrument,
- ATEQ is at your disposal for any further information concerning the use of the instrument under maximum safety conditions.



We would like to bring to your attention that ATEQ will not be held responsible for any accident connected to the improper use of the instrument, to the work bench or to the lack of compliance with safety rules.

ATEQ Company is free from any responsibility for any adjustment of its instrument which would not have been done by its own technicians.

ATEQ, THE ASSURANCE OF A COMPETENT AFTER SALES SERVICE

■ THE ATEQ AFTER SALES SERVICE IS :

- a team of qualified technicians,
- a permanent telephone assistance,
- agencies close to you for faster reaction,
- a stock of spare parts available immediately,
- a car fleet for rapid intervention,
- a commitment to quality ...

■ THE OVERHAUL

ATEQ carries out the overhaul of your instruments at interesting prices.

The overhaul corresponds to the maintenance of the instrument (checking, cleaning, replacing of used parts) as part of preventive maintenance.

Preventive maintenance is the best way to guarantee reliability and efficiency. It allows the maintenance of a group of instruments in good operational order and prevent eventual break-downs.

■ MAINTENANCE KITS

The ATEQ After Sales Service proposes, two kits destined for the preventive maintenance of the pneumatic circuits of instruments.

■ CALIBRATION

This may be carried out on site or in our offices.

ATEQ is attached to the COFRAC and delivers a certificate following a calibration.

■ TRAINING COURSES

In the framework of partnership with our customers, ATEQ offers two types of training in order to optimise the usage and knowledge of our instruments. They are aimed at different levels of technician:

- method / control training,
- maintenance / upkeep training.

■ A TARGETED TECHNICAL DOCUMENTATION

A number of technical documents are at your disposal to allow you to intervene rapidly in the event minor breakdowns:

- problem sheets describing and offering solutions to the main pneumatic and electronic problems,
- several maintenance manuals.

■ A QUALITY GUARANTEE

The instruments are guaranteed for parts and labour in our offices:

- 2 years for leak detection equipment,
- 1 year for electrical tests to norms instruments,
- 1 year for the accessories.

Our After Sales Service is capable of rapidly answering all your needs and queries.

We strongly recommend to send the instrument back to ATEQ once a year for re-calibration

PREFACE

Dear Customer,

You have just purchased an **ATEQ** instrument, we thank you for the trust you have placed on our brand. This instrument has been designed to ensure a long and unparalleled life expectancy, and we are convinced that it will give you complete satisfaction during many long years of operation.

In order to maximise the life expectancy and reliability of your **ATEQ** instrument, we recommend that you install this instrument on a secured workbench and advise you to consult this manual in order to familiarise yourself with the functions and capabilities of the instrument.

Our **ATEQ** After Sales Service centre can give you recommendations based on your specific operation requirements.

ATEQ

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Preamble

MEASUREMENT PRINCIPLE

1. DEFINITION

The **AX 6000** instrument is a milliohmmeter designed to test metallization encountered in aviation. This quality test controls the mechanical assembly of each part who constituting a plane.

For this, he characterized the control of the junction between two or more parts using the principle of measuring electrical continuity.

Each branch is then represented by an ohmic resistance which must be as low as possible.

2. PRINCIPE

The measurement principle is to circulate a calibrated continued current 0.1A, 1A or 10A between any two points A and B materializing the resistance to measure R_x . Then it proceed to read the potential between these two points, the measured voltage at terminals of the resistance is proportional to the current passing through, according to the ohm's law:

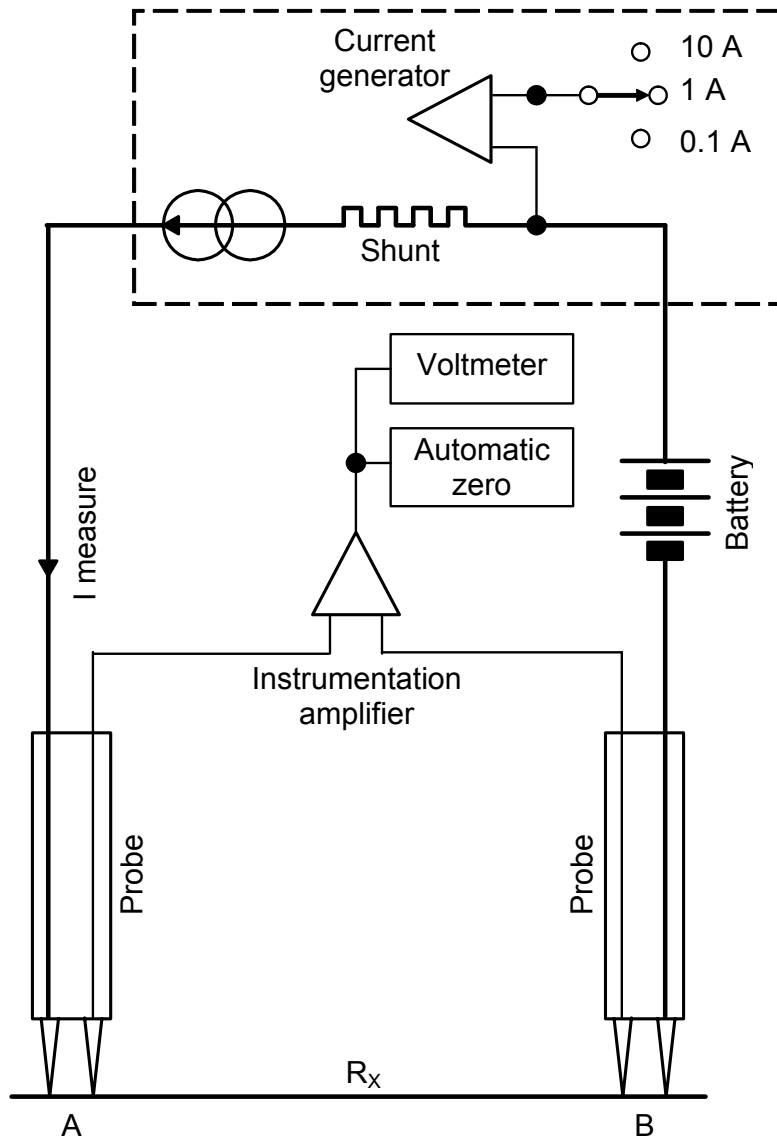
$$U = RI$$

To realize these measurements the instrument uses:

- ✓ A constant current generator supplied with a 12 V Lithium Polymer battery.
- ✓ Two probes with doubles contacts for the "4 wires" measurement:
 - A contact (point) to establish the current in the resistance to measure.
 - Another contact (point) to measure the potential difference through an instrumentation amplifier.
- ✓ A voltmeter allows reading the voltage kept at the amplifier output.

Note: the three measurement currents are: 10 A for the metallic and aluminium parts, 1 A and 0.1 A for the composites materials parts.

3. GENERAL DIAGRAM



4. AUTOMATIC ZERO

During its measurement cycle, the instrument carried out automatically an auto-zero measurement to eliminate undesirables' thermo-electrics effects in the measurement circuit and carried out the measurement zero of the instrument compensating the offset errors in the measurement amplifier.

Then, at each measurement, the instrument memorizes the spurious external voltage of the thermocouple present in the R_x terminal before the passage of the current in order to subtract it from its new value obtained during the passage of the current.

5. BATTERY / INSTRUMENT AUTONOMY

The 12VDC 4400 mA/h battery with Lithium Polymer (Li-Po) technology is integrated in a bloc. This technology allows for the best space / electrical capacity. The battery pack is removable from the device without tools.

The battery capacity guaranteed to carry out 1000 measurements. Following the battery state, number of charges and its age, it's possible that the number of measurement will decrease significantly, in this case, change the battery with a new one and recycle the old one (see the recycling conditions in the appendices).

The battery charge is carried out with the power supply which connected with a jack connector. The battery is fitted with a light (LED) which indicates to the user the charge state. The complete charge time is less than 3 hours. The charge can be carried out the battery out of the instrument.

Use only the power supply fitted with the instrument. See the instructions and security precautions concerning the instrument use in the appendices.

6. MEASUREMENT CHARACTERISTIC

Range	Measurement Current	Accuracy	Resolution
6 mΩ	1A	+/- (0.1 % MV + 6 μΩ)	1 μΩ
	10A		1 μΩ
60 mΩ	0.1A	+/- (0.1 % MV + 60 μΩ)	100 μΩ
	1A – 10A		10 μΩ
600 mΩ	0.1A – 1A – 10A	+/- (0.1 % MV + 0.6 mΩ)	100 μΩ
6 Ω	0.1A – 1A	+/- (0.1 % MV + 6 mΩ)	1 mΩ

MV = Measured Value.

6.1. MEASUREMENT RANGES SELECTION

The measurements ranges can be selected automatically (auto-ranging) or manually by the user, it's the following ones:

Manual mode		Automatic mode	
Range	Current	Range	Current
6 mΩ (2 mΩ)	1A – 10A (3A)	1μΩ – 600mΩ	10A
60 mΩ (20 mΩ)	0.1A – 1A – 10A (3A)	10μΩ – 6Ω	1A / 0.1A
600 mΩ (200 mΩ)	0.1A – 1A – 10 A (3A)		
6 Ω	0.1A – 1A		

Chapter 1

INSTRUMENT INSTALLATION

1. APPEARANCE



The **ATEQ AX6000** case is made with two anodized aluminum parts assuring durability and lightness. The case is surrounded by two rubbers to protect the device from falls and avoid marking the shocked part.

2. INSTRUMENT INSTALLATION

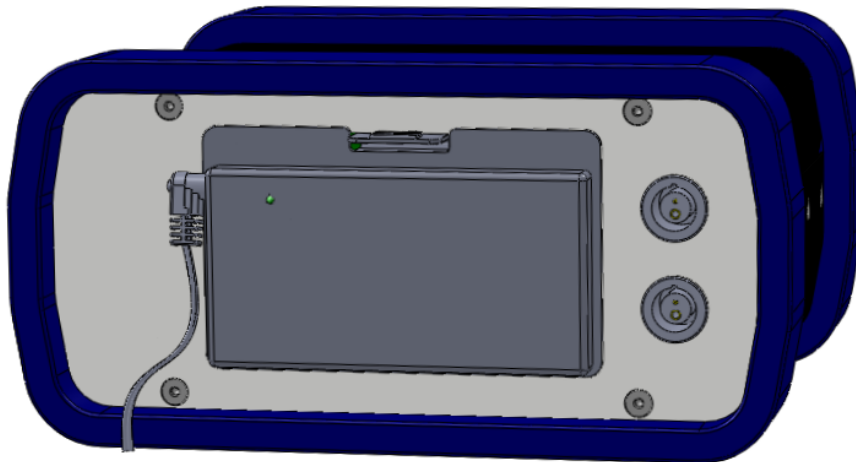
2.1. BATTERY BLOCK / SUPPLY



The **ATEQ AX6000** is running with a 12 V DC battery.

The battery has a LED light for charge state:

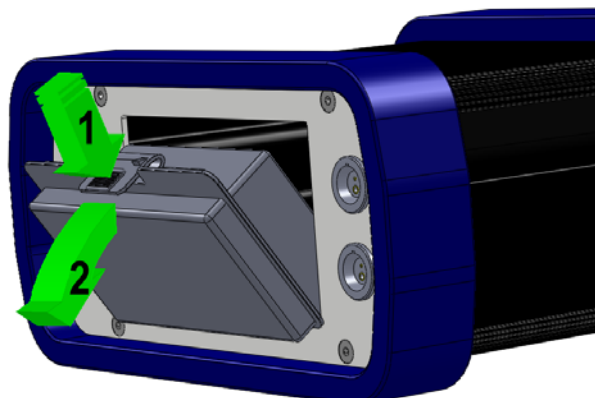
- ✓ **Red:** The battery is charging.
- ✓ **Green:** battery full.



To remove the battery from the device, proceed as follows:

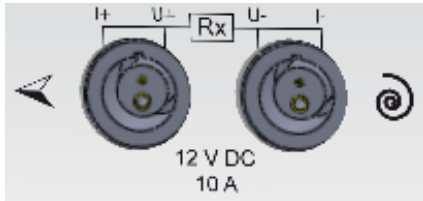
- 1) Press the burst above to unlock.
- 2) Turn the battery outwards.

To reinstall the battery, do the same operation in the reversal way.



2.2. ELECTRICS CONNECTORS

2.2.1. Test accessories connectors



The test accessories, probes, Kelvin probes pliers, etc. are connected on these two plugs. There are two connectors on the front face and two on the rear face that the user will choose following the use.

If a spool of wire is used, it must connect this spool to the plug identified by



Note: if a winding is used and if it's partially or not unwound, it's possible that the device has some measurements problems and displays the "Continuity U fault" message. In this case, it's strongly advisable to configure the instrument in the "Inductive" mode. See the chapter 3, paragraph 5.1.6 "Measurements modes".

2.2.2. USB Connector (front and rear faces)



Allows the connection to a PC. Allows the supervision with the **Winateq300** software:

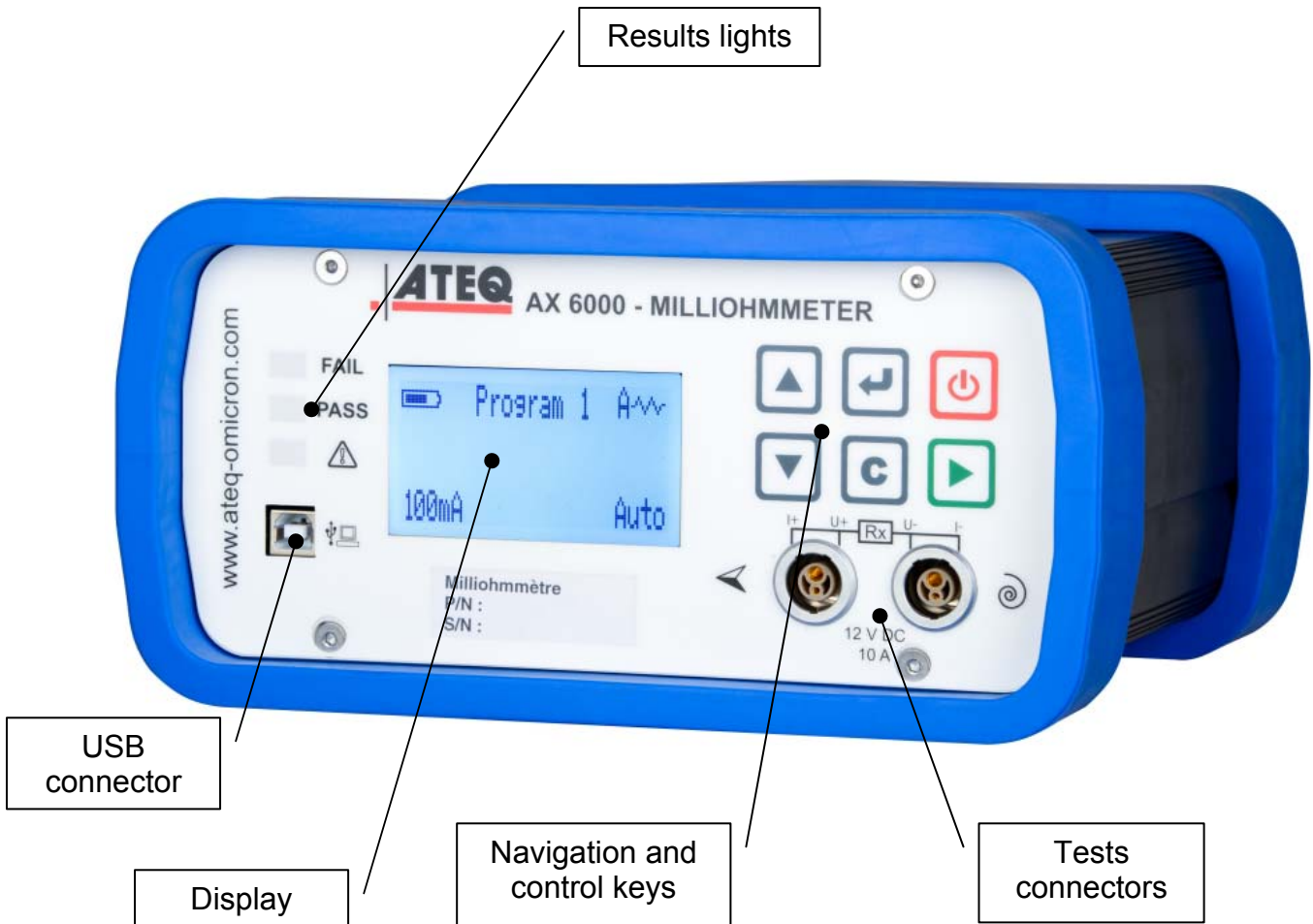
- ✓ Configuring (save / restore the parameters in a PC).
- ✓ Duplicate an instrument.
- ✓ Up dating the device.
- ✓ Results recovery for archiving and statistic analysis with spreadsheet software's.

See the **Winateq300** software manual.

Chapter 2


USER INTERFACES

1. PRESENTATION







2. KEYBOARD PRESENTATION


2.1. ON / OFF KEY

KEY	FUNCTION
	<p>Instrument off: this key switch on the device.</p> <p>Instrument on: this key switch off the device by long pressing (more than 3 seconds).</p>

2.2. NAVIGATION KEYS

KEY	FUNCTION
	Move up or increase the numeric values.
	Move down or decrease the numeric values.
	<p>ENTER key</p> <p>Quick press: Enter in the special cycle's menu, parameter entering and parameter validation.</p> <p>Long press (3 seconds): Enter in the parameters and configuration menu.</p>
	<p>"C" for CANCEL</p> <p>Return to the previous function or menu. Escape without parameter's modification.</p>

2.3. START CYCLE KEY

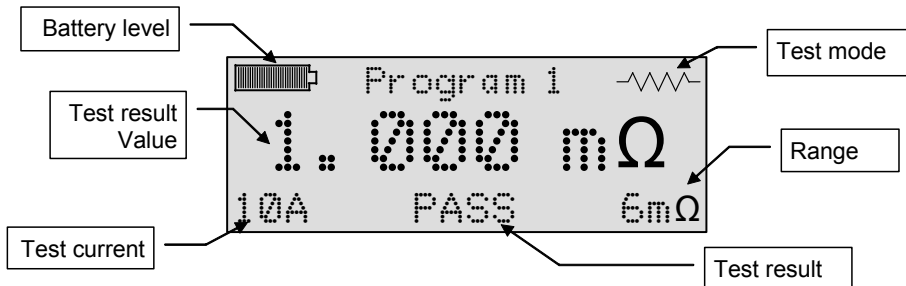
KEY	FUNCTION
	<p>START key</p> <p>Starting a measurement cycle.</p>

3. LCD DISPLAY




To display the measurement results and the parameters to adjust.

Display detail:

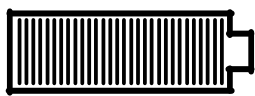


4. FUNCTIONS OF THE INDICATOR LIGHTS

The  symbol represents an indicator which is lit.

 <p>Pass part light.</p>	 <p>Fail part light.</p>	 <p>Alarm.</p>
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5. BATTERY LEVEL



Battery full.



When the display indicates an almost empty battery level, it is better to recharge.



Empty battery, recharge it (flashing) the instrument will turn off.

Note: if the instrument doesn't turn on, before any service in the device, recharge completely the battery or replace it with a full one.




6. CARRYING CASE

Note: The color of the carrying case can change without notice.



Important note: do not charge the battery when it installed into the carrying case, you must remove it to avoid overheating. See the instructions concerning the battery in the appendices.

6.1. OPEN THE CARRYING CASE

<p>Push the two buttons at the bottom of the locks.</p> <p>The locks will be released.</p>	 A black carrying case is shown from a three-quarter perspective. Two green arrows point upwards to the bottom of the latches on the front of the case.
<p>Lift the two locks to release the cover.</p>	 A close-up view of the latch mechanism. A green arrow points upwards, indicating the direction to lift the latch.
<p>Then open the cover to access to the instrument.</p>	 The carrying case is shown with its lid open. A green arrow points upwards towards the lid, indicating it should be lifted.

6.2. CLOSE THE CARRYING CASE





<p>Before closing the housing box, open the purge button (left turn).</p>	
<p>Close the cover and lock the two locks.</p>	
<p>Then close the purge button (right turn) to complete the sealing.</p>	

Chapter 3

STARTING UP AND ADJUSTMENTS

1. TURN ON THE DEVICE

The **AX6000** is running with its integrated battery.










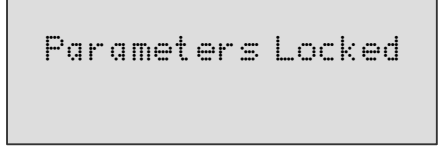

 Switches on the instrument.	
Check the battery level.	
The instrument waits a start.	

Note: if the device doesn't turn on, charge completely the battery or replace it with a full one.









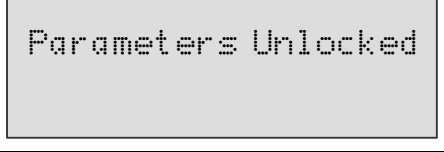
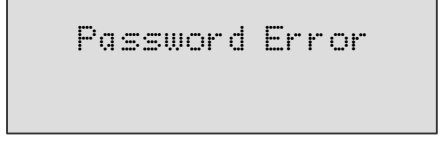
2. LOCK / UNLOCK

This function allows locking the test parameters access; this to avoid any hazardous parameters modification. The password by default is 0000.

2.1. LOCK OPERATION


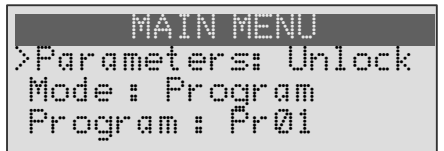






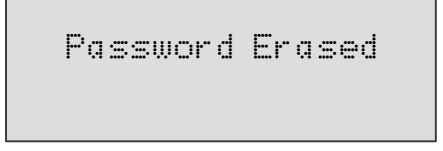
<p>Press and hold the  key (three seconds) to enter into the main menu and select the Parameters : Unlock function.</p>	
<p>Choose the Lock mode and validate with the  key.</p>	
<p>For the first time (no password entered) the instrument asks to enter one, enter 4 numbers (replace 0000 with your personal code) by using the ,  and  keys several times.</p> <p><i>Note: once the password is entered, the instrument won't require it for the next locks.</i></p>	
<p>When the password is entered, validate with the  key, the instrument displays: Parameters Locked.</p>	
<p>To lock the parameters access, select the Parameters : Lock function.</p>	

2.2. UNLOCK OPERATION

<p>Press and hold the  key (three seconds) to enter into the main menu, select the Parameters : Lock function.</p>	
<p>To unlock the parameters access, select the Unlock function.</p>	
<p>The instrument asks the password, enter the 4 numbers by using the ,  and  several times.</p>	
<p>When the password is entered, validate with the  key the message Parameters Unlocked appears.</p>	
<p>If the password is incorrect, the message Password error is displayed.</p>	

2.3. PASSWORD ERASE

The deletion of the password of the Lock / Unlock function needs to know the current password. After deletion, the current password becomes the password by default (0000).

<p>Press and hold the  key (three seconds) to enter into the main menu, select the Parameters : Lock or Parameters : Unlock function.</p>	
<p>To delete the password, select the Erase function.</p>	
<p>The instrument asks the current password, enter the 4 numbers by using the ,  and  several times.</p>	
<p>When the password is entered, validate with the  key, the instrument displays Password Erased.</p>	

3. MODE FUNCTION





The instrument had two test modes, the **Program** mode and the **Sequence** mode.

The **Program** mode allows running programs individually and unitary. The program to run choice is made by the user. The programs can be created from the front face of the device or from the **Winateq300** software. 128 different programs can be created.





The **Sequence** mode allows chaining several programs ones after ones following a defined order. The sequence choice is made by the user. One program can be in several different sequences and can be several times into the same sequence. The sequences can be edited only from a PC fitted with the **Winateq300** software.

3.1. PROGRAM NUMBER CHOICE










3.1.1. Main menu mode

<p>In the main menu, put the cursor in front of Program to select the program to run, validate with the  key.</p>	
<p>Select the program to run and validate with the  key.</p>	

3.1.2. Cycle mode

<p>To select the program to run in the CYCLE mode, use the  and  keys, then run the test program with the  key.</p>	
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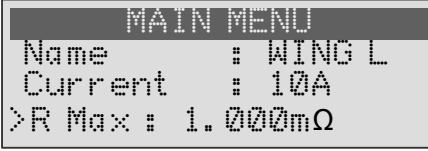



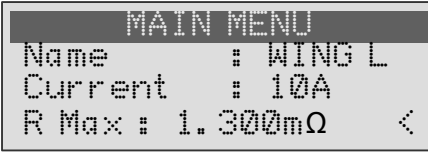
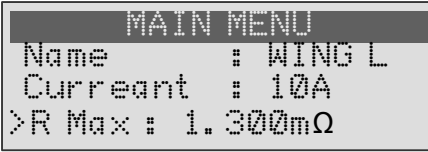
4. TEST PROGRAM CREATION

<p>Press and hold the  key (three seconds) to enter into the main menu.</p>	<pre> MAIN MENU >Parameters : Unlock Mode : Program Program : Pr01 </pre>
<p>In the main menu, put the cursor in front of Program to select the program to edit and validate with the  key.</p>	<pre> MAIN MENU Parameters : Unlock Mode : Program >Program : Pr01 </pre>
<p>Select the program to editing then validate with the  key.</p>	<pre> PROGRAMS LIST PR01 >PR02 PR03 </pre>
<p>By using the  key, go to the NAME parameter and validate with the  key.</p>	<pre> MAIN MENU Mode : Program Program : Pr02 >Name : </pre>
<p>Enter the name by using the ,  and  keys several times, when the name is entered, validate with the  key.</p>	<pre> MAIN MENU Mode : Program Program : Pr02 >Name : WING </pre>
<p>The program is created and the test parameters can be entered. The test parameters appear after the menu.</p>	<pre> MAIN MENU Program : Pr02 >Name : WING L Current : 10A </pre>

5. PARAMETERS ADJUST

Now adjust the test cycle parameters.

The process to adjust the parameters is the same for all.

<p>Press and hold the  key (three seconds) to enter into the main menu.</p>	
<p>By using the  key, move down up to the test parameters and validate with the  key, the cursor goes on the right side to confirm the parameter edition.</p>	
<p>By using the  and  keys, adjust the parameter to the hope value and validate with the  key, the cursor back to the left side of the display.</p>	
<p>Adjust the others parameters by using the same process.</p>	

5.1. PARAMETERS TO ADJUST

5.1.1. Program name (NAME)

This function allows personalizing a program, for example to identify it with the part to test name. Enter 7 alphanumeric characters maximum.

5.1.2. Measurement current (CURRENT)

The instrument had three measurements current available, the value to use is based on the material of the parts to control:

- 10 A for the metallic parts,
- 1 A and 0.1 A for the composites material parts.

5.1.3. Maximum reject (R Max.)

This parameter defines the threshold above the test part is considered as fail. If the measured value exceeds this value, the test is fail.

5.1.4. Minimum reject (R Min)

This parameter defines the threshold below which the test part is considered as fail. If the measured value does not exceed this value, the test is fail.

Note: *the measurement result must be between the minimum reject and the maximum reject to be declared pass, if not the test will be fail.*

5.1.5. Measurement ranges

The measurements ranges allow define the measurement size. More the range size is small; more the measurement will be fine and precise.

The measurement ranges can be selected automatically (auto-ranging) or manually by the user.

The ranges are: Auto, 6Ω, 600 mΩ, 60mΩ, 6mΩ (200 mΩ, 20mΩ, 2mΩ for the 3A current option).

The ranges measurement values and their accuracy are indicated in the preamble of this user manual.

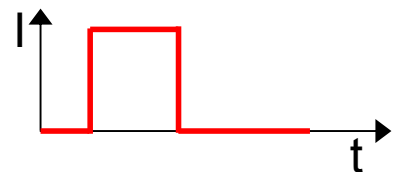
The manual mode allows to directly target the range which the user is waiting the measurement result. If he didn't know the range which the measure may be carried out, it's better to select the "**Auto**" mode, the instrument will apply the most appropriate range.

Note: *in automatic mode, the test time is a little longer than the manual mode (range research) so, the total number of tests for a battery charge can be less.*

5.1.6. Measurement mode

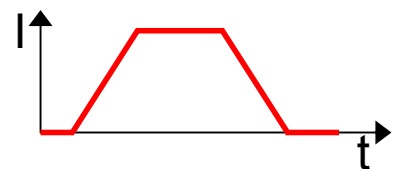
The current establishment can be done following the two modes. The mode is represented by a symbol in the upper right corner of the display in test mode.

Resistive mode: the current establishment is instantaneous. The resistive mode is represented by:



Inductive mode: to limit the impact due to inductive elements (coils) present in the measuring circuit (case of a 100 m winding not unwind or partially unwind)

This mode generates a progressive test current rise and drop in the measurement circuit. The rise and drop times can't be modify. The inductive mode is represented by:

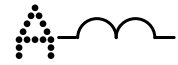


Automatic mode: this mode allows detecting if the circuit is inductive or resistive. Following the characteristics of the measured circuit, the device will adapt its measurement. The icon displayed on the right top of the screen show the mode.

If the circuit is **resistive**, the device displays the symbol:



If the circuit is **inductive**, the device displays the symbol:



Note: in the case of installation of a reel on the measurement circuit, it will be automatically detected in this mode

5.1.7. Pass part chaining

This function appears only in "**Sequence**" mode. It allows shifting automatically to the next step of the sequence, if the measurement of the current step is declared pass.

Validate by "**On**" the "**Chaining PP**" function, when the measure of the step is pass, the device shift automatically to the next step.




5.1.8. Serial Number 2

This parameter is available only with **Winatq300** software. It allows distinguishing devices. This serial number will appear in the frame of the results file.

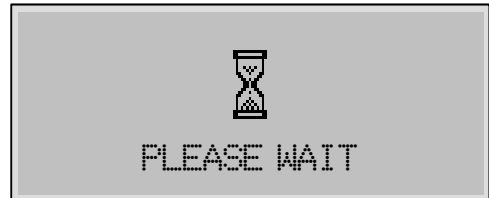
6. MEASUREMENT TRIGGERING

The measurement is triggered by:

- Simple accessories contact on the part to test (current detection). If the **Auto Start** function is on.
- Press the  key on the instrument front face.

During the measurement, an hourglass is displayed.

Note: if the **Buzzer** function is validate, a beep is ringing during the test time.



The test stops and the measurement result is displayed.



Note: if the device detects a fail part or an alarm, when the **Buzzer** function is activated, a series of short beeps are ringing.

6.1. AUTO-TEST

The instrument is fitted with an auto-test (internal test) to check the test current value. This test is carried out with a precision resistance integrated within the instrument.

7. TEST STOP

The resistance measurement stops by:

- A contact cut from one of the probes (current passing cut).
- Automatically at the end of the test.

7.1. MEASUREMENT FAIL DETECTION

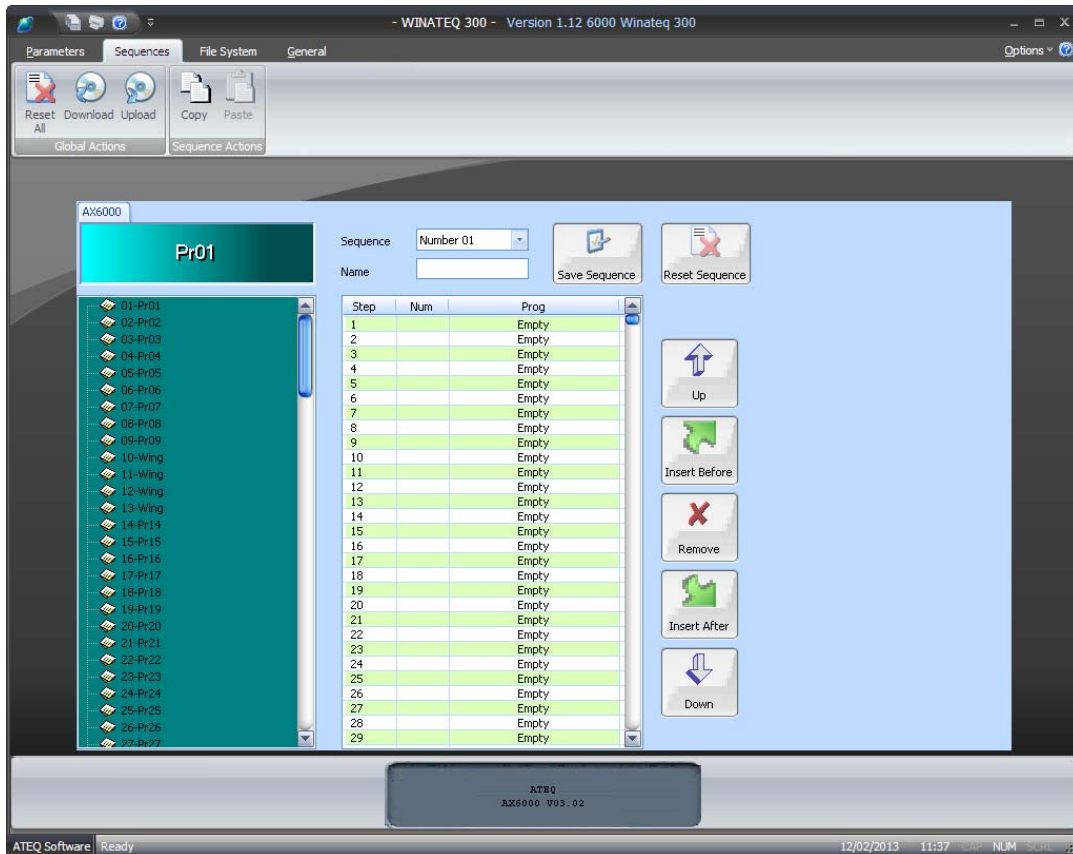
An error message notifies the operator for all fail values recorded due to cuts in one of the two loops of the measuring circuit during the test (rebounds contacts, probes press too low, etc.).

8. SEQUENCES CONFIGURATION (WINATEQ300/AX)

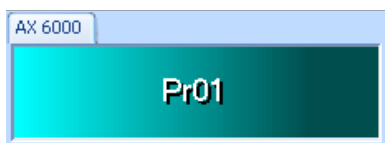


The sequences configuration can be done only with the **Winateq300 6000** software.

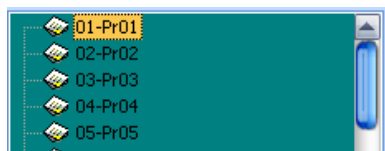
The sequence mode allows chaining several programs the ones after the others following a defined order that the operator may follow. Maximum characteristics: 128 programs; 32 sequences; 999 steps programs in a sequence.



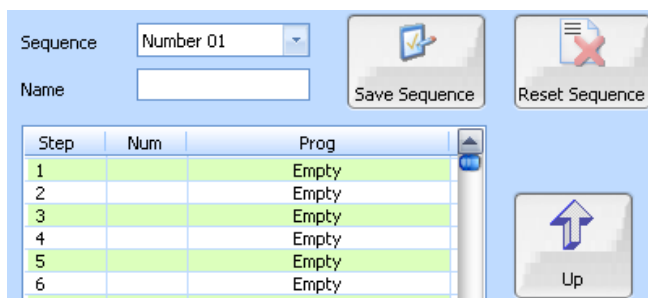
8.1. WINDOW DETAILS



Name of the device connected (left up) and number of the selected program or its name if existing.



Display window of the programs list.



Display window of the selected sequence.

8.2. AVAILABLE COMMANDS DETAIL

Global Actions menu:

- ✓ **Reset All:** deletes all the sequences in the device.
- ✓ **Download:** to save on the PC hard drive all the sequences ("Sequences.seq" files).
- ✓ **Upload:** to restore from the PC hard drive the sequences ("Sequences.seq" files).



Sequences Actions menu:

- ✓ Allows to **Copy** a sequence in the clip board.
- ✓ Allows to **Paste** the sequence from the clip board.

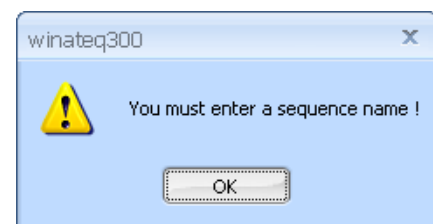
8.3. SEQUENCE MANAGEMENT

8.3.1. Sequence creation

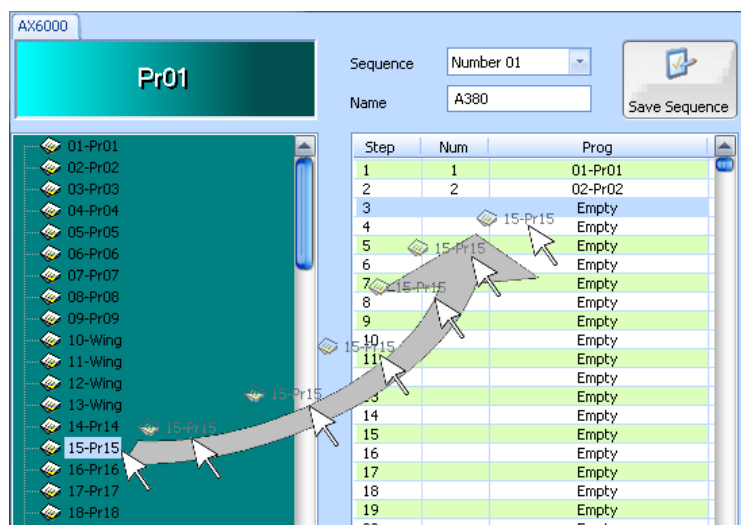
Select the sequence to create among the 128 available.

Sequence: Number 02
 Name: Wings

Do not forget to give a name for the sequence (the software will remind you).

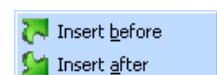


8.3.2. Program insertion



First solution: to insert a program in the sequence, do a **"Drag/Drop"**: With the mouse, drag a program you want in the left window and drop it in the sequence window (right) at the position you want.

Second solution: select a program, do a "right click", the menu appears asking insertion position in the sequence (Insert before or Insert after).



Insert Before: to insert the program above the selected step.

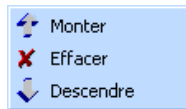
Insert After: to insert the program below the selected step.



8.3.3. Sequence management

The "**Up**", "**Remove**" and "**Down**" keys allows moving the programs in the sequence.

These actions are also available with a "right click" in the sequence window.



Once the sequence is created, it must download it into the device, use the "**Save Sequence**" key.

To completely delete the sequence, press the "**Reset Sequence**" key, the device will prompt you a confirmation.



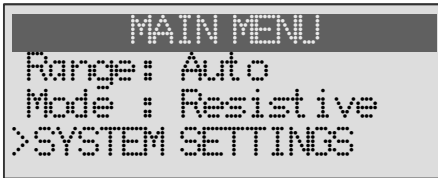












9. SEQUENCE MODE RUNNING

The sequence mode allows chaining several programs the ones after the others following a defined order. Each program is a step. The sequences can contain until 999 steps. A test program can be several times in the same sequence, or in several sequences.



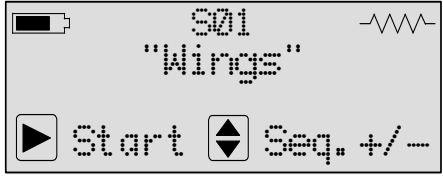
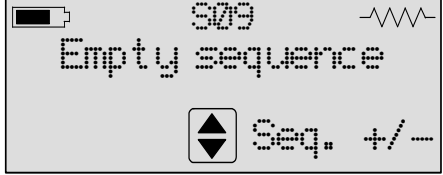
The tests cycles are chained according the user who will run the steps whatever the result of each test (pass part or fail part).

Remind: The sequences programming can only be done from the **Winatq300** software. See paragraph 8 "Sequences configuration (Winatq300/AX)".





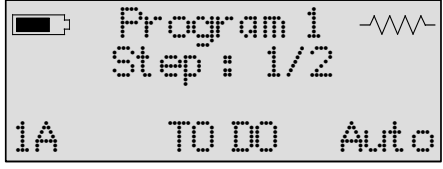

9.1. "SEQUENCE" MODE SETTING

<p>Access to the menu des "SYSTEME SETTINGS" menu to validate the sequence mode.</p>	
<p>Select the "Mode" parameter and validate with the  key.</p>	
<p>With the  and  keys select the "Sequence" mode, validate with the  key.</p>	
<p>The device confirms the "Sequence" mode selection.</p>	
<p>Once the "Sequence" mode selected, the parameter "Chaining PP" appears. This parameter, when validated by "On", allows shift to the following step in the sequence when the current test is "Pass".</p>	
<p>To back to the "Program" mode, by using the  and  key, select the "Program" mode, and validate with .</p>	






9.2. SEQUENCE SELECTION



<p>With the  and  keys, select the sequence to carry out (here S01). We access the "Operator" menu (see below).</p>	
<p>If the sequence doesn't exist, the message "Empty sequence" appears on the screen. Back to a available sequence.</p>	

9.3. OPERATOR NAME INPUT

<p>When the "Operator" menu appears, enter or check the operator name, this name will appear in the results frame. Then select "Validation" and press the  key to validate.</p>	
<p>The device will wait for measuring the first step; it displays the program and the step. It's possible to change the step by using the  or  keys.</p>	
<p>If the fields "Name", "N2" and "N3" are filled, they will appear here.</p>	

9.4. CARRYING OUT THE MEASUREMENT OF A SEQUENCE

<p>Make a contact with the probes and press again the  key. If the Auto Start function is on, the device runs a measurement automatically.</p>	
<p>To jump to the following step, press the  key. The message "TO DO" appears. Run the second step like the first one. If the "Chaining PP" option is validate (see above) the steps shift automatically.</p>	
<p>So continue with all the steps until the sequence end.</p>	


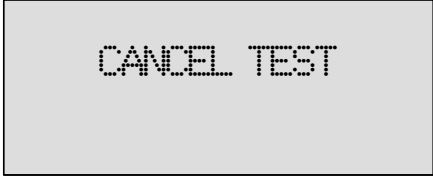
Note: the user can at any time navigate through the sequence by pressing the  and  keys. So, he can see the measurement values for each step and see the remains steps.

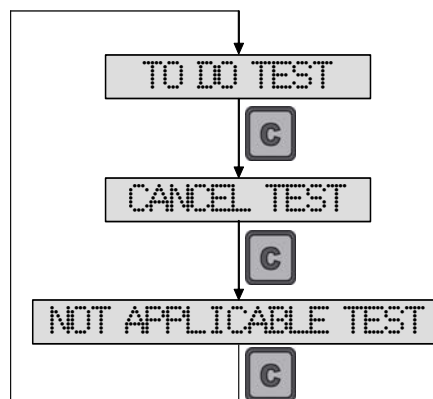
9.5. CHANGE A STEP ATTRIBUTE

The user can "jump" a step and leave it "TO DO" or change its attribute:

- Attribute "**CANCEL**" for impossible test.
- Attribute "**N/A**", not applicable for not still installed option.



At any time the step attribute can be change.

<p>To change the step attribute, the user have to press successively the  key. The message with the "CANCEL TEST" attribute appears.</p>	
--	--



Note: if the device is turned off during a sequence progress, the sequence will be saved to be restart when turn on.




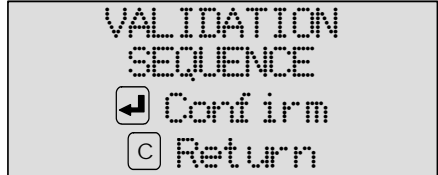
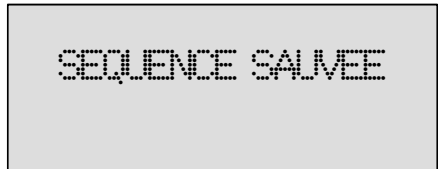
9.6. SEQUENCE VALIDATION AND COMPLETION

<p>At any time, if the user press the  key during the sequence progress, the special cycles menu appears to manage the sequence.</p>	
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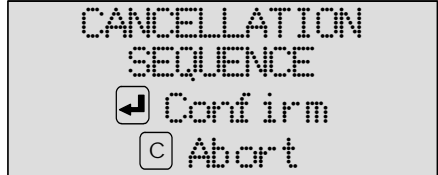
By using these functions, it's possible to select:

- **Seq. validation:** to validate and save the current sequence.
- **Seq. cancellation:** to cancel the current sequence, that is to say all the tests carried out in the sequence and start from the beginning.



9.6.1. Sequence validation

<p>Select the "Seq. validation" menu to record it and press the  key.</p>	
<p>The validation menu is displayed, press the  key to confirm.</p>	
<p>When this message appears the sequence is saved. The steps not carried out won't appear in the results.</p>	

9.6.2. Sequence cancellation

<p>To cancel the current sequence, select the "Seq. cancellation" menu and press the  key to confirm.</p>	
<p>The device prompt you to confirm the cancellation, press the  key.</p>	

9.7. DISPLAY AGE THE SEQUENCES FILTERS

<p>If the user presses the  key during the sequence progress the special cycle's menu appears to manage the sequence.</p>	
--	--

With these functions, it's possible to:

- **Tests –TO DO-**: to display all the steps remaining in the sequence (or the skipped ones) to ease these steps to retrieve.
- **Tests –CANCEL-**: to display all the steps which are be cancelled in the sequence to ease these steps to retrieve.
- **Tests -N/A-** : to display all the steps which are be reported "**Not applicable**".

Chapter 4

FUNCTIONS OF THE INSTRUMENT

1. MENU STRUCTURE


1.1. MAIN MENU

To access to the main menu, press and hold the ENTER  key until the main menu appears (about 3 seconds).

MAIN MENU	Under menu 1	Under menu 2	Under menu 3
Parameters	Unlock		
V	Lock		
V	Erase (password)		
V			
MODE	program		
V	Sequence		
V			
PROGRAM	Pr 01 to Pr 128		
V			
NAME			
V			
Current	10A		
V	1A		
V	100mA		
V			
Maximum reject (R. MAX.)	0 to 6000mΩ		The maximum thresholds values can vary following the chosen range.
V			
Minimum reject (R. MIN.)	0 to 6000mΩ		
V			
Measurement ranges	Auto > 6Ω > 600mΩ (200mΩ) > 60mΩ (20mΩ) > 6mΩ (2mΩ)		The 200mΩ, 20mΩ and 2mΩ ranges are only for the 3A current option.
V			
MODE	Resistive		
V	Inductive		
V	Automatic		
V			
Chaining PP	Off		This menu appears only in "sequence" mode
V	On		
V			
System settings	Language	English	
V	V	French	
V	V		

MAIN MENU	Under menu 1	Under menu 2	Under menu 3
	Date / Hour	No	
	↓	Yes	Day
	↓		Month
	↓		Year
	↓		Hour
	↓		Minutes
	Backlight	0% to 100% (step 10%)	
	↓		
	Auto off	No to 30 min	
	↓		
	Buzzer	On / Off	
	↓		
	Automatic Start	On / Off	
	↓		
	Delete current program		
	Delete all the programs		



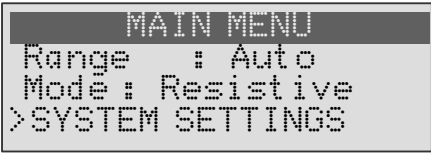
1.2. SPECIAL CYCLES MENU

To access to the special cycles menu, press briefly the ENTER  key (less than one second).

MAIN MENU	Under menu 1	Under menu 2	Under menu 3
SPECIAL CYCLE	None		
	Auto-test	10A (3A) > 1A > 0.1A	
	↓		
	Reset sequence	<i>These messages appear only in Sequence mode and sequence started.</i>	
	Tests – TO DO-		
	Tests –CANCEL-		
	Tests –N/A-		
	↓		
	Erase results		








2. SYSTEM SETTINGS

The **SYSTEM SETTINGS** menu allows configuring the instrument following the user preferences.

<p>In all cases, to access to the SYSTEM SETTINGS menu, Press and hold the  key (three seconds) to enter to the MAIN MENU and select the SYSTEM SETTINGS menu.</p> <p>Validate with the  key.</p>	 <pre> MAIN MENU Range : Auto Mode : Resistive >SYSTEM SETTINGS </pre>
--	--

2.1. LANGUAGE
















This function allows choosing the language displayed. The resident languages in the device are: English and French.

<p>In the SYSTEM SETTINGS menu, select the Language function and validate with the  key.</p>	 <pre> SYSTEM SETTINGS MENU >Language : English Date : 10/08/09 Hour : 10:25 </pre>
<p>By using the  and  keys, select the language.</p>	 <pre> LANGUAGE LIST >English French </pre>
<p>Validate with the  key to confirm the new displayed language.</p>	 <pre> MENU REGLAGES SYSTEME >Langue : Français Date : 10/08/09 Heure : 10:25 </pre>

2.2. DATE AND HOUR












The device gets a clock (hour, minutes) and an internal calendar (day, month, year) which allows dating the events and the archives.

2.2.1. Date

<p>In the SYSTEM SETTINGS menu, select the Date function and validate with the  key.</p>	
<p>By using the  and  keys, adjust the day.</p>	
<p>Validate with the  key to skip to the month adjust. By using the  and  keys, adjust the month.</p>	
<p>Validate with the  key to skip to the year adjust. By using the  and  keys, adjust the year.</p>	
<p>To save the date, validate with the  key.</p>	

2.2.2. Hour


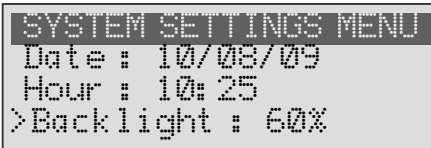




Proceed in the same way as the date for setting the time.


<p>In the SYSTEM SETTINGS menu, select the Hour function and validate with the  key.</p>	
<p>By using the  and  keys, adjust the hour.</p>	
<p>Validate with the  key, to skip to the minutes adjust, by using the  and  keys, adjust the minutes.</p>	
<p>To save the hour, validate with the  key</p>	

2.3. LIGHTING THE SCREEN

The brightness of the backlighting can be set so as to suit the backlighting to the ambient lighting or your personal preferences. The screen backlighting is programmable and can be altered. This adjust is from 0% (backlight off) to 100% (maximum light).






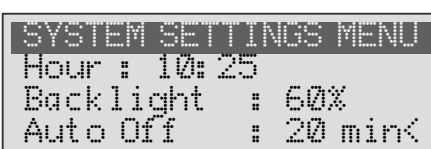
Backlighting of low brightness will save battery power. Specify a setting that suits the way you use the instrument.

<p>In the SYSTEM SETTINGS menu, select the Backlight function and validate with the  key.</p>	
<p>By using the  and  keys, select the backlight intensity from 0 % (off) to 100 % (maximum) by step of 10 % then validate with the  Key.</p>	

Note: the backlight intensity is modified after the validation with the  key.






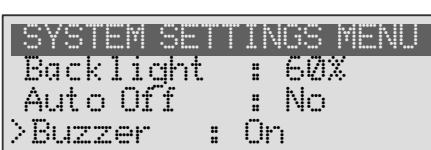
2.4. AUTO OFF

This feature conserve battery life by automatically turning the instrument off after a user-defined period of time within there has been no key activity.

<p>In the SYSTEM SETTINGS menu, select the Auto Off function and validate with the  key.</p>	
<p>By using the  and  keys, adjust the time before turn off from No (never turn off) to 30 minutes. Validate with the  key.</p>	





2.5. BUZZER

The **Buzzer** function allows ringing beeps. When this function is on, a beep is ringing during all the measurement time. When the device detects a fail part or an alarm, a series of short beeps are ringing.

<p>In the SYSTEM SETTINGS menu, select the Buzzer function and validate with the  key.</p>	
<p>By using the  and  keys, select On or Off to validate or not the beep ringing and then confirm by using the  key.</p>	


2.6. AUTOMATIC START

The Automatic start function allows validating the automatic trigger of the measurement when the accessories are making an electric contact with the part to control (current control).

<p>In the SYSTEM SETTINGS menu, select the Auto Start function and validate with the  key.</p>	<pre>SYSTEM SETTINGS MENU >Auto Start : Off Reset program reset all programs</pre>
<p>By using the  and  keys, select On or Off to validate or not the automatic start and then confirm by using the  key.</p>	<pre>SYSTEM SETTINGS MENU >Auto Start : On Reset program reset all programs</pre>

2.7. PROGRAMS DELETION

This function will erase one or all the programs to reset them.

<p>In the SYSTEM SETTINGS menu, select the Reset program function to delete the current program or Reset all programs. To delete all the programs contained in the device.</p> <p>Warning! : <i>Until the validation, the program or all the programs will be definitively deleted!</i></p> <p>Validate with the  key.</p>	<pre>SYSTEM SETTINGS MENU Auto Start : On >Reset program reset all programs</pre>
<p>The instrument deletes the program or all.</p>	<pre>Reseting program</pre>

3. DATA MANAGEMENT

3.1. RESULTS STORAGE

The device is fitted with an internal memory greater than 1 Go only used for the results storage, that allows recording several thousands of measurements results. Each measurements carried out are automatically save at the end of the test.

The results recovery is only carried out from the **Winateq300** software; in this paragraph we will show some frames examples.

3.1.1. Manual mode results frames (Program)

The measurements values and some parameters are stored to be export for later use.

Prog N°.	Program name	Test Current	Max Reject.	Min Reject	Measu re	Unity	Results	Date	Hour	Serial N°
1	R WING	10 A	1050mΩ	0mΩ	1029	mOhm	PASS	23/09/09	09:15:48	01254
2	L WING	1A	1060mΩ	0mΩ	1012	mOhm	PASS	23/09/09	09:17:52	01254
3	NOSE	0,1A	1035mΩ	0mΩ	0	mOhm	FAIL	23/09/09	09:20:16	01254

3.1.2. Automatic mode frames (Sequence)

In the automatic mode the following fields will be added:

- ✓ Sequence N°.
- ✓ Sequence name (ex: plane reference).
- ✓ Program step in the sequence (from 1 to 999).
- ✓ User identifier.

Seq N°	Seq Name	Step	Prog N°	Name 1	Name 2	Name 3	Test current	Max Reject	Min Reject	Measure (R)	Unit	Result	Date	Hour	User	Serial N°	Serial N° 2
1	A320	1	9	WING	Left	Front	10 A	1050mΩ	0mΩ	1029	mOhm	PASS	04/02/13	09:55:38	Jack	01254	0101
1	A320	2	3	WING	Right	Front	1A	1060mΩ	0mΩ	1012	mOhm	FAIL	04/02/13	09:57:52	Jack	01254	0101
1	A320	3	2	NOSE	Front			mΩ	mΩ		mOhm	TO DO				01254	0101
1	A320	4	5	STAB	Right		1A	1050mΩ	0mΩ	952	mOhm	PASS	04/02/13	10:03:08	Jack	01254	0101
1	A320	5	5	STAB	Rear		1A	1075mΩ	0mΩ		mOhm	N/A	04/02/13	10:06:17	Jack	01254	0101

3. SPECIALS CYCLES MENU

3.1. SPECIAL CYCLES AVAILABLE

The following list shows all the special cycles which are available in the instrument:

Special cycle	Function
✓ Auto-test:	Special cycle used to check the test current.
✓ Sequence delete*:	To delete the current sequence, canceling all the tests carried out in the sequence and starts the sequence from the beginning.
✓ Tests –TO DO-*:	Allows displaying all the tests which are to do in the current sequence (or the ones which have been skipped). This is to ease the "to do" steps to retrieve.
✓ Tests – CANCEL-*:	Allows displaying all the steps which have been cancelled in the current sequence. This is to ease the cancelled steps to retrieve.
✓ Erase results:	This special cycle delete all the results stored in the internal memory. This operation deletes all definitively. It is advisable to make a backup of the results before deleting (see the Winateq300 user manual).


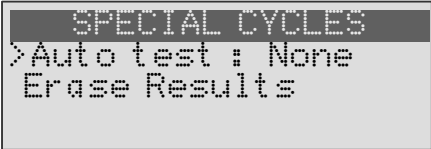


To start a special cycle, select it in the "**Special cycles**" menu and press on the  key. The cycle stops automatically.









* For further information about the sequences and the corresponding specials cycle, see the chapter 3, paragraph 8: "Sequence mode running".

3.2. RUN SPECIALS CYCLES

3.2.1. Auto-test


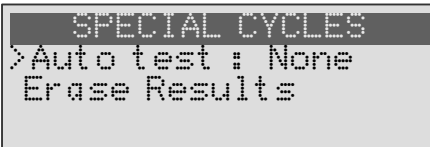


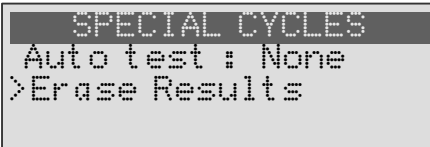
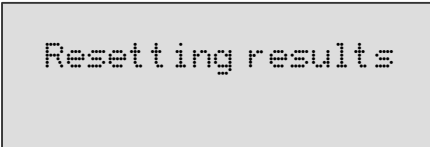
Special cycle used to check test current.

<p>Press on the  key (brief press) to enter in the Special Cycles menu.</p>	
<p>Select the Auto test special cycle then confirm with the  key.</p>	

<p>Select the range to check among 100 mA, 1 A and 10 A, by using the  and  keys, confirm with the  key.</p>	
<p>The instrument confirms the special cycle and the selected current. Start the test with the  key. Example 1 A range.</p>	
<p>At the test end, the instrument displays the result which may be equal or near of the current value checked.</p>	
<p>If the current value is not correct, the instrument displays an ALARM to indicate a current measurement fault.</p>	

3.2.2. Results deletion

This special cycle erase all the results stored in the instrument. The results will be definitively deleted. It is advisable to save them first if archiving or later statistic treatments are required. For the save, see the **Winateq300** software user manual.

<p>Press on the  key (brief press) to enter in the Special Cycles menu.</p>	
<p>Select the special cycle Erase Results then confirm with the  key to delete all the results stored.</p> <p>Warning! : <i>Until the validation, the results will be definitively deleted!</i></p> <p>Confirm with the  key.</p>	
<p>The instrument confirms the results deletion.</p>	

Chapter 5

ACCESSORIES

1. ACCESSORIES

1.1. POWER SUPPLY



The power supply (fitted with the instrument) converts a network voltage (100 to 240 V AC) into a 24 V DC low voltage supply. It has no power switch and works as soon as it is plugged in.

It allows supplying the battery device which manage itself the charge.

It is protected against surges and short circuits via a thermal fuse (do not use any other type of fuse).

Moreover, this supply can be plugged on all types of electrical plugs using different removable pins.

The instrument is not designed to work during the battery charge.

1.2. BATTERY



The 12V DC 4400 mA/h battery with Lithium Polymer (Li-Po) technology is integrated into a case of our design.

The charge is done with the power supply which is directly plugged on the battery with a jack connector. The battery is fitted with a LED which indicates the charge state.

The battery charge time is less than 3 hours. The charge can be carried out without the battery installed on the instrument.

See the battery use conditions in the "Safety precautions" paragraph in the appendices.

2 batteries are supplied with the instrument.

1.3. USB CABLE



The USB cable (supplied with the device) allows the connection between the instrument and a personal computer.

1.4. SOFT CARRYING CASE



The soft carrying case allows the user to carry easier the device on the test area.

1.5. TRANSPORT CASE

Strong case with the dimensions: Large 520, Depth 440 and high 230 for the storage of the following components:



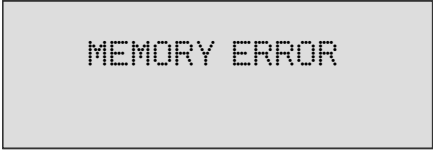

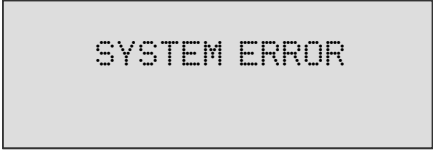


- ✓ 1 measurement device **AX6000**,
- ✓ 1 second battery,
- ✓ 1 power supply for battery charging,
- ✓ 1 probe small size,
- ✓ 1 probe long size,
- ✓ 1 Kelvin probe pliers,
- ✓ 1 VN/VG cable.

Chapter 6

ERROR MESSAGES

The **ATEQ AX6000** can display error messages if there are operational problems.

PROBLEM	LIGHTS	DISPLAYED MESSAGES
<p>OVER RANGE</p> <p>The measure is out of the full scale. Action: take another measurement range, or configure the instrument in automatic range.</p>		
<p>CONTINUITY U FAULT</p> <p>Contact break on the voltmeter loop. Action: restart a measurement, if the problem persists, check the contact quality accessories and fittings.</p>		
<p>CONTINUITY I FAULT</p> <p>Contact break on the current generator loop. Action: restart a measurement, if the problem persists, check the contact quality accessories and fittings.</p>		
<p>MEASUREMENT FAILURE</p> <p>Measurement board failure. Action: turn off and restart the device, if the problem persists, contact the ATEQ after sale service.</p>		
<p>AUTOTEST ALARM</p> <p>Auto-test fault. The internal auto-test cycle result is fail, so the test current is on wrong value. Action: make one or several auto-test cycles on all the ranges, if the problem persists, contact the ATEQ after sale service.</p>		
<p>Password error</p> <p>The password entered is wrong. Action: try again with the right password.</p>		

PROBLEM	LIGHTS	DISPLAYED MESSAGES
<p>MEMORY ERROR</p> <p>The internal memory is full. The device can run measurements, but the results and the programs modifications are not saved.</p> <p>Action: empty the memory (delete some results files).</p>		
<p>SD CARD FAULT</p> <p>Internal memory failure. The device can run measurements, but the results and the programs modifications are not saved.</p> <p>Action: contact ATEQ after sales services.</p>		
<p>SYSTEM ERROR</p> <p>A fatal internal system error occurs.</p> <p>Action: try to switch of and restart the instrument, if the problem persists, contact ATEQ after sales services.</p>		
<p>CONFIGURATION ERROR</p> <p>A fatal internal configuration error occurs.</p> <p>Action: try to switch of and restart the instrument, if the problem persists, contact ATEQ after sales services.</p>		
<p>PARAMETERS ERROR</p> <p>One or several parameters in the test parameters or in the system settings or not compatible.</p> <p>Action: try to make a reset of the system and restart the instrument, if the problem persists, contact ATEQ after sales services.</p>		

Chapter 7

OPERATIONAL PROBLEMS

1. PROBABLES FAILURES

If a failure with the device appears, see the following list (left column) to identify the fault, make checks or actions steps (right column) in the same order.


Identified failure	Remedial action
1 – The device doesn't turn on.	<ol style="list-style-type: none"> 1) Charge fully the battery. 2) Change the battery by a new one. 3) Check the electric contacts between the battery and the device. 4) Contact the ATEQ after sales service.
2 – Wrong or false measures.	<ol style="list-style-type: none"> 1) Check the battery charge. 2) Repeat the measurement test, by pressing strongly the probes to improve the contact 3) Check the quality of the electric contacts of the probes, Kelvin probes or others accessories. 4) Check the probes connection. 5) Check the wires between the probes and the device (winding, etc.). 6) Contact the ATEQ after sales service.
3 – Erroneous or erratic measures.	<ol style="list-style-type: none"> 1) Check the battery charge. 2) Repeat the measurement test, by pressing strongly the probes to improve the contact 3) Check the quality of the electric contacts of the probes, Kelvin probes or others accessories. 4) Check the probes connection. 5) Check the wires between the probes and the device (winding, etc.). 6) Check the device calibration, if it fails send back the device to the ATEQ after sales service. 7) Contact the ATEQ after sales service.

The **ATEQ** Company disclaims any responsibility if the instruments calibration and adjustment would not be performed by its services.

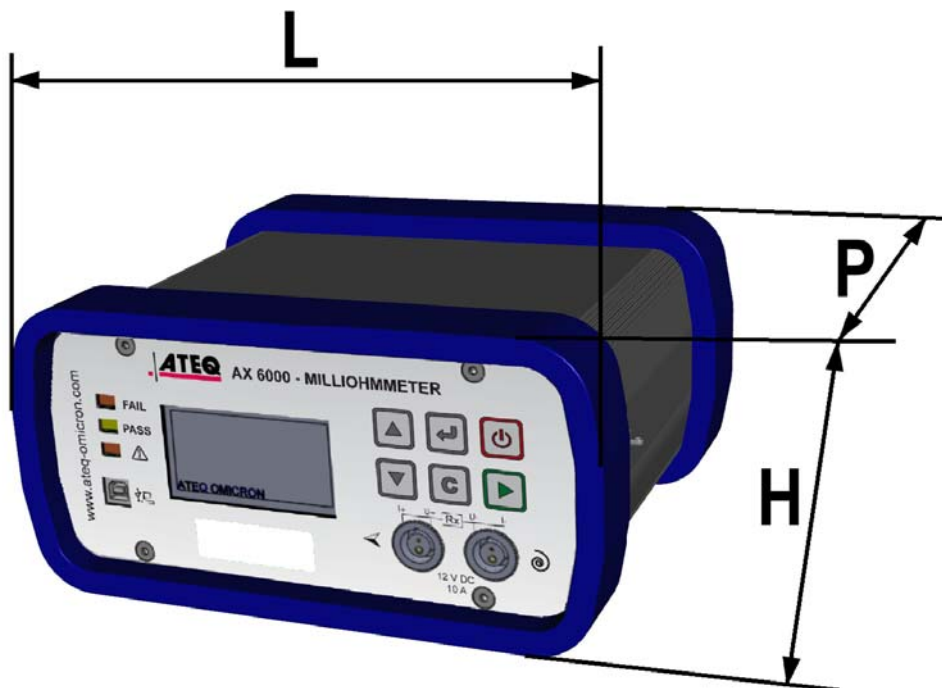
Appendices

ATEQ AX6000

1. TECHNICALS CHARACTERISTICS

	AX6000
Power supply:	24 V DC concentric jack
Battery:	Lithium Polymer (see safety information below)
Weight (kg):	About 2,8
Display :	LCD 4 lines 60 mm x 32 mm
Temperatures:	
Use:	-15° C to +50° C (+5° F to +122° F)
Storage:	-20° C to +70° C (-4° F to +158° F)
Battery recommendations:	 Storage and transport : see instructions below.

2. DIMENSION DRAWING



L: 240 mm / **H:** 120 mm / **P:** 210 mm.

3. SAFETY INFORMATION

You must read and understand these safety instructions and warnings before using or charging your lithium polymer batteries.

Operating environment

Remember to follow any special current regulations any area, and always switch off your device when its use is prohibited or when it may cause interference or danger.

Use the device only in its normal operating positions.

About Charging

Use only the charger supplied with your device. Use of another type of charger will result in malfunction and/or danger.

Use the specified battery in the equipment.

When the red LED is on, the device is charging, when becomes green, the charge is complete.

Avoid leaving the charged battery constantly charging (green LED on) in order to preserve its life.

About the Charger

Do not use the charger in a high moisture environment. Never touch the charger when your hands or feet are wet.

Allow ventilation around the charger when using it. Do not cover the charger with paper or other objects that will reduce cooling. Do not use the charger while it is inside a carrying case.

Connect the charger to a proper power source. The voltage requirements are found on the product case and/or packaging.

Do not use the charger if the wires become damaged. Do not attempt to service the unit. There are no serviceable parts inside. Replace the unit if it is damaged or exposed to excess moisture.

Do not use it as a power source.

Unplug it before attempting to service or clean it.

About the Battery

CAUTION: *This unit contains an internal Lithium Polymer battery. The battery can burst or explode, releasing hazardous chemicals. To reduce the risk of fire or burns, do not disassemble, crush, pierce or dispose of the battery or the instrument in fire or water, do not short circuit or short the contacts with a metal object.*

Use a specified charger approved by the **ATEQ** manufacturer and supplied with the device.

Safety for Lithium Polymer battery use

The battery must imperatively be placed on a non-flammable surface during charging (ceramic platter or metal box).

Charge the Lithium Polymer battery **ONLY** with the charger provided.

NEVER use a Ni-MH (Nickel Metal Hydride) type battery charger to charge a Lithium Polymer battery.

If the battery begins to overheat more than **60°C (140° F)**, **STOP IMMEDIATELY** the charge. The battery should **NEVER** exceed **60°C (140° F)** during the charging process.

NEVER charge a battery pack immediately after use and while still hot. Leave it cool down to ambient temperature.

If you see some smoke or some liquid out of the battery, stop the charge immediately. Disconnect the battery from the charger and place it in an isolated area for at least 15 minutes. **DO NOT USE THE BATTERY AGAIN**, but replace it with new one.

Keep a fire extinguisher for electrical fires handy while charging the battery. In the unlikely event that the Lithium Polymer battery will ignite, **DO NOT** use water to extinguish the fire, take some sand or fire extinguisher described above.

Do not pierce, cut or **NEVER** compress the jacket of a Lithium Polymer battery. If the battery is swelling up or if the cover is damaged, **DO NOT USE AGAIN**. Replace with a new one.

It must neutralize the Lithium Polymer battery elements unusable. The neutralization process must be performed with very strict security fit. It is recommended that you contact a specialist in this type of battery to perform this task, which is responsible to collect the battery out of use and gives to a specialized recycler.

Do not dispose of Lithium Polymer batteries to the dustbin.

To prevent leakage or other hazards, do not store batteries above **60°C (140°F)**. Never leave the battery inside a car (for example) where the temperature could be very high or in a place where temperatures could exceed **60°C (140°F)**. Store the battery in a dry place to avoid contact with liquid, whatever the type. Store the battery only on a nonflammable surface, heat resistant, non conductive and away from all flammable materials or sources. Always store the battery out of reach of children.

A Lithium Polymer battery should be stored with a minimum charge of 30%. If you store completely discharged, it will quickly become unusable.

Lithium batteries transportation

The battery transport must be done with a charge less than 50%. Shippers are required to understand and comply with regulations for their national and international shipments.

The entire airline regulations is published by the International Air Transport Association (IATA) and is on the website:

<http://www.iata.org/whatwedo/cargo/dgr/Pages/lithium-batteries.aspx>

If you don't follow these safety precautions, you may cause serious personal injury and damage to property; you may even cause a fire!

The **ATEQ** Company disclaims any responsibility for damage sustained in case of non compliance with these safety instructions.

Using a Lithium Polymer battery has a high risk of fires and can cause serious damages to property and persons, the user agrees to accept the risk and responsibility.

The **ATEQ** Company couldn't control the proper use of the battery for each customer (charge, discharge, storage etc.), It can not be held responsible for damage to persons and property.

Important instructions (for service personnel only)

CAUTION: *Risk of explosion if battery is replaced by an incorrect type. Dispose of used batteries according to the instructions.*

Replace only with the same or equivalent type recommended by the manufacturer **ATEQ**.

Use the battery only in the specified equipment.

The battery must be recycled or disposed of properly.

REMINDER INFORMATION ON BATTERY PACK

Charge	Less than 3 hours for a complete charge.
Discharge	More than 6 hours .
Life time	More than 300 cycles of charge and discharge. Battery replacement recommended every two years.
Storage	The charge must be more than 30% for long storages. <ul style="list-style-type: none"> ➤ ≤ 1 month: -20°C to +45°C (-4°F to 113°F). ➤ ≤ 3 months: 0°C to 30°C (32°F to 86°F). ➤ ≤ 6 months: 20°C +/- 5°C (59°F to 77°F).
Transport	The charge must be less than 50% .
Power	50 Wh.
Weight	0.3 kg.

4. RECYCLING

Do not dispose of the rechargeable Lithium-Ion battery or the device to the dustbin.



These components must be collected and recycled.



The crossed-out wheeled dustbin means that within the EU the product must be taken to separate collection at the product end-of life. This applies to your tool but also to any enhancements marked with this symbol. Do not dispose of these products as unsorted municipal waste. For further information, please contact **ATEQ**.

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