a-AP30TUR
Turbidimeter

Instruction Manual

English

Español

Français

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1. INTRODUCTION

AquaSearcher™ AP30TUR combines the scattered light method and the transmitted light method, and uses a near-infrared light source to eliminate color interference, which conforms to the ISO7027 standard. There are two detectors: 90° and 180° in the instrument. The 180° detector receives the transmitted light, and the 90° detector receives the scattered light. The intensity of the scattered light and the transmitted light is positive to the turbidity in the sample. The intensity of light and transmitted light is used to calculate the turbidity value of the sample.

It has the following features:

- Built-in filter to avoid background light interference.
- High-precision optical structure, accurate and stable measurement.
- Built-in high-performance micro-processing core, high data processing power.
- Easy to use, text on the screen indicates operation instructions.
- Small size, light weight, dustproof and shockproof.

1.1 Safety Precautions

Definition of Signal Warnings and Symbols

Safety notes are marked with signal words and warning symbols. These show safety issues and warnings. Ignoring the safety notes may lead to personal injury, damage to the instrument, malfunctions and false results.

Signal Words

WARNING	For a hazardous situation with medium risk, possibly resulting in severe injuries or death if not avoided.
CAUTION	For a hazardous situation with low risk, resulting in damage to the device or the property or in loss of data, or minor or medium injuries if not avoided.
ATTENTION	For important information about the product. May lead to equipment damage if not avoided.
NOTE	For useful information about the product.

Warning Symbols


General hazard


Explosion hazard


Warning corrosion

Safety Precautions

CAUTION: Read all safety warnings before installing, making connections, or servicing this equipment. Failure to comply with these warnings could result in personal injury and/or property damage. Retain all instructions for future reference.

- Operate the equipment only under ambient conditions specified in these instructions.
- The equipment is for indoor use only.
- Do not operate the equipment in hazardous, or unstable environments.
- Use only approved accessories and peripherals.
- Service should only be performed by authorized personnel.

WARNING: Never work in an environment subject to explosion hazards! The housing of the instrument is not gas tight. (Explosion hazard due to spark formation, corrosion caused by the ingress of gases).

WARNING: When using chemicals and solvents, comply with the instructions of the producer and the general lab safety rules.

1.2 Intended Use

This instrument is intended for use in laboratories, pharmacies, schools, businesses and light industry. It must only be used for measuring the parameters described in these operating instructions. Any other type of use and operation beyond the limits of technical specifications, without written consent from OHAUS, is considered as not intended.This instrument complies with current industry standards and the recognized safety regulations; however, it can constitute a hazard in use.If the instrument is not used according to these operating instructions, the intended protection provided by the instrument may be impaired.

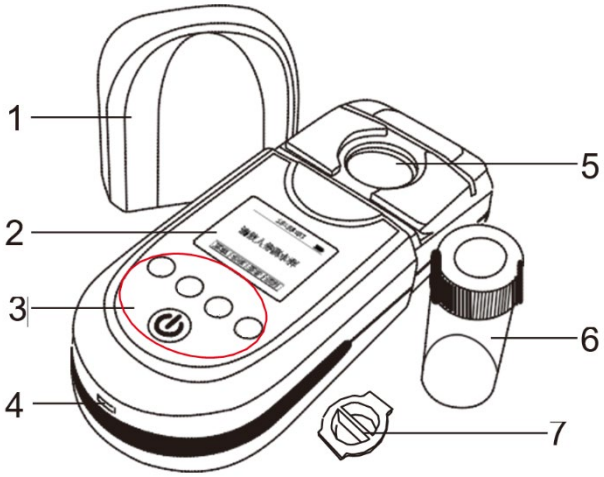
2. NOTICE

1. When holding the bottle, please take the bottle cap directly, and do not touch the part below the line of the bottle with your hand.
2. Clean the watch surface with a lens cleaning cloth before placing the bottle in the slot.
3. Keep the white bottle intact, without scratches, and clean inside and outside.
4. The silk screen"▽" on the black bottle should be aligned with the "△"on the edge of the black groove.
5. During the testing, there must be no bubbles on the inner wall of the white bottle, otherwise the measurement accuracy will be affected, and the bubbles can be discharged by tilting slightly.
6. When recalibrating, it is necessary to place the standard solution strictly according to the instructions on the interface. For AP30TURL Turbidimeter perform four calibration points of 0/1/2/100 NTU must be calibrated, and the four calibration points of 200/400/800/1000NTU can be freely selected and work on AP30TURH Turbidimeter
7. Please put on the shading cover before testing.
8. Avoid any liquid or foreign objects entering the detection tank. After use, please cover the rubber sealing plug in time, and pay attention to the direction of the sealing plug (the arrow of the sealing plug is in the same direction as the arrow of the instrument logo).

   The illustrations are for reference only.

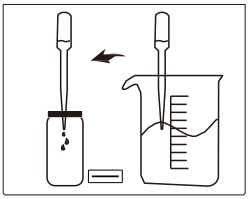
3. OVERVIEW

3.1 Menu Function

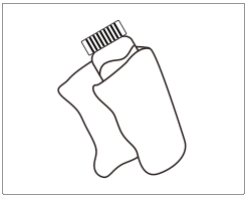


No.	Description
1	Shading Cover
2	Display Screen
3	Button
4	USB
5	Cuvette
6	Colorimetric Tube
7	Rubber seal plug

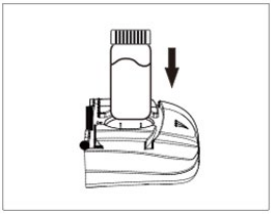
3.2 Measuring Procedure



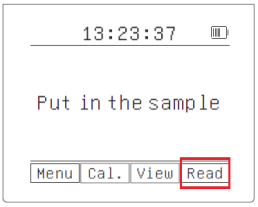
1. Add more than 10ml of the solution to be tested, tighten the bottle cap, and add carefully to avoid air bubbles.



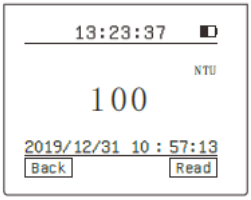
2. Wipe the bottle with a soft cloth.



3. Put the colorimetric bottle into the colorimetric tank.

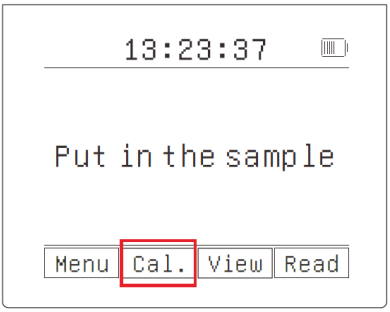


4. Click "Read" to enter the "Checking" interface.

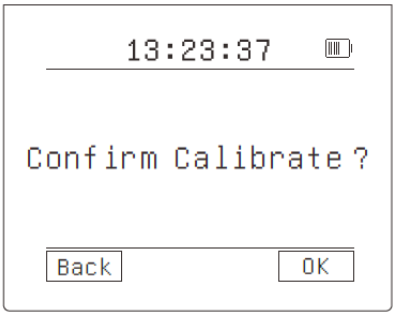


5. After the test result is displayed, click "Back" to return to the main interface; click "Read" to perform the next test.

3.3 Calibration Procedure

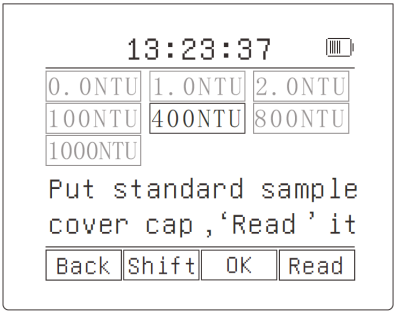


1. Click "Calibration" on the main screen to enter the " Confirm Calibrate" screen.



2. Click "Back" to cancel the calibration and return to the main interface. Click "OK" to enter the calibration interface.

3. Click "Back" to cancel the calibration and return to the main interface. Click "Read" to enter the "Checking" interface. Automatically switch to the next calibration point, and then complete the calibration of 4 calibration points of 0/1/2/100 NTU.



4. After completing the first 4 points calibration, the subsequent calibration interface adds "switch" and "complete" two functions.

Click "OK" to complete the calibration and return to the main interface.

Click "Shift" to switch the calibration density between the last 3 calibration points.

You can select the calibration point by yourself and click "Read" to start the calibration.

3.4 System Menu

Menu	Description
1.Automatic Shutdown	Set the automatic shutdown time of the instrument in the case of no operation, the setting range is 0~99, unit minutes, 0 means no shutdown, the default setting is 5 minutes
2.Instrument Information	View instrument model, software version number, measurement range.
3. Restore Factory	Clear the test records and calibrate the log to return to the default setting.
4.Software Update	Software update operation, detailed software update operation.
5.Time Setting	Set the time of the instrument, according to the format of "year-month-day-hour-minute".
6.Language Setting	Switching between Chinese and English in the instrument operation field.

3.5 View Log

View log	Description
1.Data log	The data log list is arranged in reverse chronological order. Press the "Read" button to enter the "View Log" detailed interface to display the data log content in detail.
2.Calibration log	1. The log calibration list, arranged in reverse chronological order; hit "√" the currently used calibration log. 2. Press the "Read" button to enter the "View Log" detailed interface to display the calibration log content in detail. 3. In the detailed display of the calibration log interface, press the "Select" key, the calibration log will automatically mark "√", indicating that it is set to the current state of use. 4. The“*”mark is the default calibration log of the export. It is automatically selected when the export settings are restored.
3.Check by date	Enter the period for viewing the data log and read the data log within the period

4. OTHER OPERATION

4.1 Test Record Checking

When the instrument is turned on, after connecting the instrument and the computer with a USB data cable, the computer will automatically recognize the instrument and display the drive letter " AP30" on the computer.

You can operate the instrument in the same way as the U disk. The test record is saved in the "Record" folder. "CalibrateRecord.csv" is the calibration data log, and "DetectionRecord.csv" is the measurement data log. You can double-click to open and view the details or copy the data to your computer.
Note: Do not delete the two program files under the AP30/App file.

4.2 Software Update

1. Connect the instrument to the computer via a USB cable, and a removable disk with the drive letter AP30 appears.

2. Under the main interface, click "Menu".

3. After entering the menu, click on the "4. Software Update" option. Since software update is an irreversible operation, the instrument will now use "Whether to upgrade the software" and click "OK" to enter the upgrade file confirmation interface.

4. The software upgrade interface prompts "Please confirm that the file is placed in the correct directory". At this time, you can copy the software upgrade file (the file name is " AP30.bin ") to "My Computer"-" AP30" - "App" folder under the folder to cover the original file.

5. Click “Confirm” on the instrument to enter the automatic upgrade process.

6. The instrument automatically shuts down first, and after prompting "Please wait while upgrading" and "Please restart after successful upgrade", it will automatically restart to complete the software update.

5. TECHNICAL DATA

5.1 Specification

Equipment Ratings:

Indoor use only

Altitude:	2,000m/6,562ft
Operating temperature:	5˚C to 40˚C (41˚F to 104˚F)
Humidity:	Maximum relative humidity 80% for temperatures up to 31˚C (87.8˚F) decreasing linearly to 50% relative humidity at 40˚C (104˚F).
Electrical supply:	4 x AAA (LR03) Batteries.
Pollution degree:	2

Table 5-1 Models Specification

Model	**AP30TURL**	**AP30TURH**
Lamp	LED IR	LED IR
Measure Range	0 ~ 200 NTU	0~1000 NTU
Calibration	Up to 4 Points	Max 8 Point Calibration
Accuracy	≤0.2NTU （0~5NTU） or ±5% （5~200NTU）	≤0.3NTU or ±8% F.S.
Repeatability	≤0.1NTU，0~5NTU； Reading ±1%， 5~200NTU	≤0.1NTU，0~10NTU； ±1%，10~200/1000NTU
Zero Drift	±0.1 NTU /30 min	≤0.3% F.S /30 min
Resolution	0.01 (0~9.99 NTU), 0.1 (10~99.9 NTU), 1 (100~200 NTU)	0.01 (0~9.99 NTU), 0.1 (10~99.9 NTU), 1 (100~1000 NTU)
Operating Temp	5 ~ 40 ˚C	
Storage Temp	-10 ~ 55 ˚C	
Humidity	0 ~ 80 % R.H. (non-condensing)	
Working Altitude	Up to 2000m	
Power	4 (AAA) Batteries (Included)	
Dimensions	170 × 72 × 44 mm	
Weight	290 g	

5.2 Features

1. The use of near-infrared LED light source, low level interference, in line with ISO7027 standards.
2. OLED full color display screen, the data display is clear and contrasting.
3. The keys and the display screen are protected by acrylic panels.
4. The test results are automatically saved, and 5000 test results can be stored, so that historical data can be queried.
5. USB interface is anti-water design.
6. Supporting power management, the USB cable can be used for data transfer.
7. The turbidity calibration solution is imported which could be stored at room temperature.
8. Support multi-point calibration.
9. One key "Restore the settings" function.
10. Special carrying case, dustproof and shockproof.

6. MAINTENANCE

6.1 Cleaning

Attention: Do not use solvents, harsh chemicals, ammonia or abrasive cleaning agents.

The housing may be cleaned with a cloth dampened with a mild detergent if necessary.

7. SERVICE INFORMATION

Please visit our website at www.ohaus.com to contact an Ohaus office near you.

8. COMPLIANCE

Compliance to the following standards is indicated by the corresponding mark on the product.

Mark	Standard
CE	This product complies with the applicable harmonized standards of EU Directives 2011/65/EU (RoHS), 2014/30/EU (EMC). The EU Declaration of Conformity is available online at www.ohaus.com/ce.
	This product complies with the EU Directive 2012/19/EU (WEEE) and 2006/66/EC (Batteries). Please dispose of this product in accordance with local regulations at the collecting point specified for electrical and electronic equipment. For disposal instructions in Europe, refer to www.ohaus.com/weee.
	EN 61326-1

ISED Canada Compliance Statement:
CAN ICES-003(A) / NMB-003(A)

ISO 9001 Registration
The management system governing the production of this product is ISO 9001 certified.

FCC Supplier Declaration of Conformity

Unintentional Radiator per 47CFR Part B
Trade Name: OHAUS CORPORATION
Model or Family identification: a-AP30TURx

Party issuing Supplier's Declaration of Conformity:
Ohaus Instruments (Changzhou) Co., Ltd.
Building C, No. 6 Zhengqiang Road, Xuejia Town, Xinbei District, Changzhou
Jiangsu 213022
China
Phone: +86 519 85287270

Responsible Party – U.S. Contact Information:
Ohaus Corporation
8 Campus Drive, Suite 105
Parsippany, NJ 07054
United States
Phone: +1 973 377 9000
Web: www.ohaus.com

FCC Compliance Statement:
Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.