

EN

OPERATING MANUAL
HOT-WIRE ANEMOMETER



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Notes regarding the operating manual


Symbols


 **Warning of electrical voltage**
 This symbol indicates dangers to the life and health of persons due to electrical voltage.

 **Warning**
 This signal word indicates a hazard with an average risk level which, if not avoided, can result in serious injury or death.

 **Caution**
 This signal word indicates a hazard with a low risk level which, if not avoided, can result in minor or moderate injury.

Note
 This signal word indicates important information (e.g. material damage), but does not indicate hazards.

 **Info**
 Information marked with this symbol helps you to carry out your tasks quickly and safely.

 **Follow the manual**
 Information marked with this symbol indicates that the operating manual must be observed.

You can download the current version of the operating manual and the EU declaration of conformity via the following link:




TA300



<https://hub.trotec.com/?id=43282>

Safety

Read this manual carefully before starting or using the device. Always store the manual in the immediate vicinity of the device or its site of use.

-  **Warning**
Read all safety warnings and all instructions. Failure to follow the warnings and instructions may result in electric shock, fire and/or serious injury.
Save all warnings and instructions for future reference.
- Do not use the device in potentially explosive rooms or areas and do not install it there.
 - Do not use the device in aggressive atmosphere.
 - Do not immerse the device in water. Do not allow liquids to penetrate into the device.
 - The device may only be used in dry surroundings and must not be used in the rain or at a relative humidity exceeding the operating conditions.
 - Protect the device from permanent direct sunlight.
 - Do not expose the device to strong vibrations.
 - Do not remove any safety signs, stickers or labels from the device. Keep all safety signs, stickers and labels in legible condition.
 - Do not open the device.
 - Never charge batteries that cannot be recharged.
 - Different types of batteries and new and used batteries must not be used together.
 - Insert the batteries into the battery compartment according to the correct polarity.
 - Remove discharged batteries from the device. Batteries contain materials hazardous to the environment. Dispose of the batteries according to the national regulations.
 - Remove the batteries from the device if you will not be using the device for a longer period of time.
 - Never short-circuit the supply terminal in the battery compartment!

- Do not swallow batteries! If a battery is swallowed, it can cause severe internal burns within 2 hours! These burns can lead to death!
- If you think batteries might have been swallowed or otherwise entered the body, seek medical attention immediately!
- Keep new and used batteries and an open battery compartment away from children.
- Observe the storage and operating conditions (see Technical data).

Intended use

Only use the device for indoor measurements of air velocity, volume flow and temperature within the measuring range specified in the technical data. Observe and comply with the technical data.

To use the device for its intended use, only use accessories and spare parts which have been approved by Trotec.

Foreseeable misuse

Do not use the device in potentially explosive atmospheres, for measurements in liquids or at live parts.

Any unauthorised changes, modifications or alterations to the device are forbidden.

Personnel qualifications

People who use this device must:

- have read and understood the operating manual, especially the Safety chapter.

Residual risks



Warning of electrical voltage

There is a risk of a short-circuit due to liquids penetrating the housing!
Do not immerse the device and the accessories in water. Make sure that no water or other liquids can enter the housing.



Warning of electrical voltage

Work on the electrical components must only be carried out by an authorised specialist company!



Warning

Risk of suffocation!
Do not leave the packaging lying around. Children may use it as a dangerous toy.



Warning

The device is not a toy and does not belong in the hands of children.



Warning

Dangers can occur at the device when it is used by untrained people in an unprofessional or improper way! Observe the personnel qualifications!



Caution

Keep a sufficient distance from heat sources.

Note

To prevent damages to the device, do not expose it to extreme temperatures, extreme humidity or moisture.

Note

Do not use abrasive cleaners or solvents to clean the device.

Information about the device

Device description

The anemometer TA300 is a hot-wire anemometer for the determination of air velocity, air temperature and volumetric flow.

The device comes equipped with a hot-wire sensor and microprocessor technology for signal amplification. This combination guarantees precise measuring results.

Owing to the dual LC display you can easily read the measuring results even in poor lighting conditions.

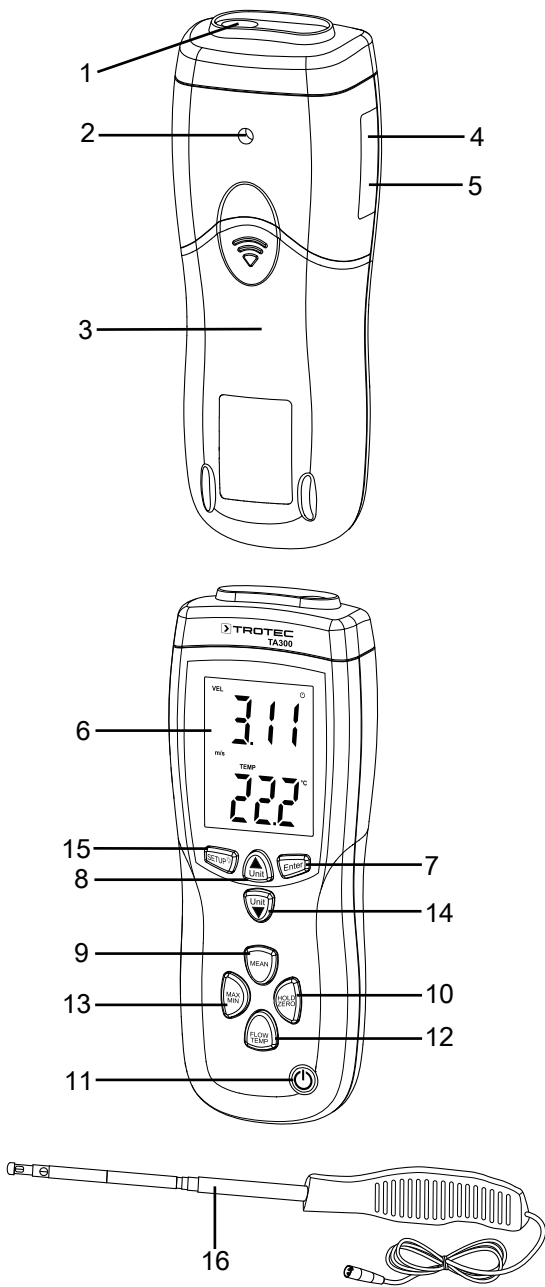
The device can measure the following parameters:

- Air velocity
 - metres per second (m/s)
 - feet per minute (ft/min)
 - kilometres per hour (km/h)
 - miles per hour (mph)
 - nautical miles per hour in knots (kn)
- Air volume flow
 - CFM (cubic feet per minute)
 - CMM (cubic metres per minute)
- Air temperature
 - degrees Celsius
 - degrees Fahrenheit

Furthermore, a MAX/MIN function and a HOLD function are available for assessment of the measurements.

Optionally, it is also possible to read and save measurement data directly on a PC by means of the software included in the scope of delivery.

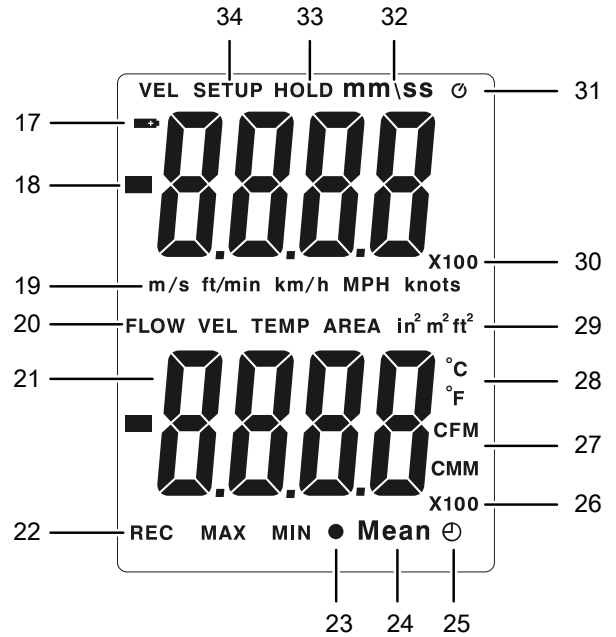
Device depiction



No.	Designation
1	Sensor input
2	Tripod thread
3	Battery compartment
4	Mini USB port
5	Charging cable connection
6	Display
7	Enter button
8	Unit ▲ button
9	MEAN button
10	HOLD/ZERO button
11	Power button

No.	Designation
12	FLOW/TEMP button
13	MAX/MIN button
14	Unit ▼ button
15	Setup / illumination button
16	Sensor

Display



No.	Designation
17	Battery status indication
18	Primary display air velocity
19	Indication of the air velocity unit
20	Measuring mode indication
21	Secondary display
22	MAX/MIN/REC indication
23	Symbol for multi-point averaging calculation
24	Averaging calculation
25	Symbol for averaging calculation with timekeeping
26	Multiple of the data on the secondary display
27	Volumetric flow units
28	Temperature units
29	Area units for the flow cross-section
30	Multiple of the data on the primary display
31	Symbol for automatic switch-off function
32	Timer symbol
33	Hold function
34	Menu

Technical data

Parameter	Value
Dimensions of the device (height x width x depth)	210 x 75 x 50 mm
Display	Dual LC display, 46.7 x 60 mm
Weight (packaging excluded)	280 g
Power supply	1 x 9 V battery
Operating conditions	0 °C to 50 °C, < 80 % RH
Sampling	after approx. 0.8 seconds
Air velocity	
Measuring range	m/s: 0.1 to 25.0 ft/min: 20 to 4925 km/h: 0.3 to 90 MPH: 0.2 to 55.8 kn: 0.2 to 48.5
Resolution	m/s: 0.01 ft/min: 1 km/h: 0.1 MPH: 0.1 kn: 0.1
Accuracy	m/s: ± 5 % of the measured value + 1 digit
Air volume flow	
Measuring range	CFM: 0.001 to 999999 ft ³ /min CMM: 0.001 to 999999 m ³ /min
Temperature	
Measuring range	°C: 0 to 50 °C °F: 32.0 to 122.0 °F
Resolution	°C: 0.1 °F: 0.1
Accuracy	°C: ± 1.0 °C °F: ± 1.8 °F

Scope of delivery

- 1 x Hot-wire anemometer TA300
- 1 x 9 V battery
- 1 x Hot-wire sensor
- 1 x Charging cable
- 1 x Transport case
- 1 x Mini USB cable
- 1 x CD-ROM with *Manometer&Flowmeter* software
- 1 x Quick guide
- 1 x Calibration certificate

Transport and storage

Note

If you store or transport the device improperly, the device may be damaged.

Note the information regarding transport and storage of the device.

Transport

For transporting the device, use the transport case included in the scope of delivery in order to protect the device from external influences.

Storage

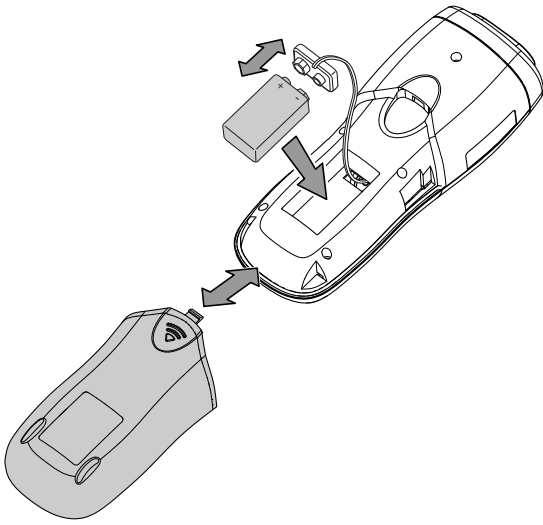
When the device is not being used, observe the following storage conditions:

- dry and protected from frost and heat
- protected from dust and direct sunlight
- For storing the device, use the transport case included in the scope of delivery in order to protect the device from external influences.
- the storage temperature complies with the values specified in the Technical data
- Remove the battery from the device.

Operation

Inserting the battery

1. Open the battery compartment (3) at the rear of the device by sliding the cover down at the arrow mark.
2. Use the battery clip to connect the 9 V battery with correct polarity.
3. Place the battery with the battery clip into the battery compartment.
4. Slide the cover back onto the battery compartment.
 - ⇒ The cover should click into place.



Info

Please note that moving from a cold area to a warm area can lead to condensation forming on the device's circuit board. This physical and unavoidable effect can falsify the measurement. In this case, the display shows either no measured values or they are incorrect. Wait a few minutes until the device has become adjusted to the changed conditions before carrying out a measurement.

Switching the device on

1. Connect the hot-wire sensor to the sensor input.
2. Press the Power button (11).
 - ⇒ The device is switched on.
 - ⇒ The hot-wire sensor will have warmed up after 8 seconds.

Measuring the air velocity

The air velocity can be indicated in 5 different units:

- metres per second (m/s)
- feet per minute (ft/min)
- kilometres per hour (km/h)
- miles per hour (mph)
- nautical miles per hour in knots (kn)

1. Press the Unit ▲ button (8) until the desired unit is displayed.
2. Press the Unit ▼ button (14) to switch between °C and °F for the temperature indication.
3. Press the HOLD/ZERO button (10) for approx. 2 s to reset the value to zero.
4. Slide the silver-coloured sensor cover downwards to measure the air values.
5. Then extend the sensor to the desired length.
6. At the sensor head you will find a mark in the shape of an arrow. During the measurement it must point upwind.
 - ⇒ The measured value will be indicated on the display.
 - ⇒ The temperature value appears on the bottom section of the screen.

Carrying out a multi-point averaging calculation

1. Press the MEAN button (9).
 - ⇒ MEAN will be displayed. You are now in the calculation mode for the determination of an air velocity multi-point average value.
2. Slide the silver-coloured sensor cover downwards to measure the air values.
3. Then extend the sensor to the desired length.
4. Press the FLOW/TEMP button (12) to start the calculation.
5. Press the Enter button (7).
 - ⇒ The value will be saved.
 - ⇒ The calculation process has been initiated.
6. Once you have reached the required number of measured values, again press the MEAN button (9).
 - ⇒ MEAN starts flashing.
 - ⇒ The calculated average value will be displayed.

In order to return to the standard measurement process, press the MEAN button (9) one more.

Performing an averaging calculation over a specific time period

1. Press and hold the MEAN button (9) for approx. 2 s.
⇒ MEAN will be displayed. You are now in the calculation mode for the determination of an average value based on the values measured over a specific time period.
2. The time will be indicated in the upper half of the display.
3. Slide the silver-coloured sensor cover downwards to measure the air values.
4. Then extend the sensor to the desired length.
5. Press the FLOW/TEMP button (12) to start the calculation.
6. Press the Enter button (7).
⇒ The calculation process will be initiated.
7. You can repeatedly interrupt and resume the measurement process by pressing Enter (7).
8. In order to stop measuring, press MEAN (9).
⇒ MEAN starts flashing.
⇒ The calculated average value will be displayed.

In order to return to the standard measurement process, press the MEAN button (9) one more.

Freeze function

1. Briefly press the HOLD/ZERO button (10).
⇒ The current value will be held.
2. Press the HOLD/ZERO button (10) again for approx. 2 s to reset the value to zero.

Changing the unit

1. Press the Unit ▲ button (8) to display the velocity in either m/s, km/h, ft/min, mph or knots.
2. Press the Unit ▼ button (14) to switch between °C and °F on the temperature scale.
3. If the device is in flow mode, you can switch between the units CFM and CMM by pressing the Unit ▼ (14) button.

Displaying MIN/MAX values

The minimum (MIN) and maximum (MAX) values can be determined via a measurement interval.

1. Press the MAX/MIN button (13).
⇒ If you press the button once, you can view the maximum value.
⇒ If you press it twice, you can view the minimum value.
2. Press the MAX/MIN button (13) for approx. 2 s to return to the normal measuring mode.

Changing the menu options

The menu can be used for changing the units for volumetric flow, the cross-section of the flow channel and the automatic switch-off.

To access the setup menu, please proceed as follows:

1. Press and hold the Setup button (15) for approx. 3 seconds.
⇒ The word "Setup" appears when you are in the menu.
2. Press the Unit ▼ (14) or Unit ▲ (8) button to choose the desired menu item you want to edit.
3. For changing the options, follow the instructions in the following chapters.

Changing the unit for the assumed cross-section of the flow channel

1. In the menu, select the menu item Unit and confirm by pressing Enter (7).
⇒ "AREA" appears under the menu item "Unit".
2. Now change the units by means of the unit buttons.
3. Press the key (7) again to confirm your entry.
⇒ You have now changed the unit for the assumed cross-section of the flow channel.

Changing the volumetric flow profile

1. In the menu, select the menu item "AREA" and confirm by pressing the Enter (7) button.
⇒ The 4-figure number AREA flashes.
2. Change the position of the decimal point one digit to the left by pressing the Unit ▲ (8) button.
3. Change the position of the decimal point one digit to the right by pressing the Unit ▼ (14) button.
4. Press the Enter button (7).
⇒ The rightmost digit flashes.
5. Use the Unit buttons to change the value.
6. To move to one digit to the left, press the MEAN (9) button.
7. This is how you change other digits as well.
8. Press the Enter button (7) to save the settings.
⇒ You have now changed the volumetric flow profile.

Automatic switch-off

1. In the menu, select the menu item "SLP" and confirm by pressing the Enter (7) button.
2. Use the Unit buttons to select ON or OFF and confirm again by pressing the Enter (7) button.
⇒ You activated or deactivated the automatic switch-off function.

Setting the background illumination

The display comes with a background illumination that can be switched on as needed.

Press the Setup / illumination button (15) to switch the background illumination on or off.

Switching the device off

Press the On/Off button (11) to switch the device off.

Software

The supplied free software is designed for useful basic functionalities. Trotec assumes no liability with regard to this free software and also provides no support on that score. Trotec accepts no liability concerning the use of this free software and is under no obligation to make adjustments or to further develop updates or upgrades.

Installation requirements

Ensure that the following minimum requirements for installing the PC software are fulfilled:

- Supported operating systems (32 or 64 bit version):
 - Windows 10
 - Windows 8
 - Windows 7
 - Windows Vista
 - Windows XP
- Hardware requirements:
 - processor speed: min. 90 MHz
 - 32 MB RAM, minimum
 - 7 MB hard disk space, minimum
 - a minimum screen resolution of 1024 x 768 pixels with a 16 bit colour depth

Installing the PC software

Administrator rights are required for the software installation.

1. Place the supplied software CD into the CD-ROM drive and download the current software from the Trotec homepage download area.
2. Connect the device via USB cable to your computer and follow the instructions on the screen.
3. Once the installation has been completed, start the *Launch METER.exe* via the shortcut.
4. The data will now be displayed by the programme's graphics.

The data recorded in this way can be saved, exported and printed. Also you can manipulate the indication of the measured values using the checkboxes.

Errors and faults

The device has been checked for proper functioning several times during production. If malfunctions occur nonetheless, check the device according to the following list.

Indication	Cause	Remedy
OL	air pressure or air velocity above the measuring range	<ul style="list-style-type: none"> • Check the battery voltage and insert a new high quality battery for testing purposes. • Choose a different location for measuring. If the message continues to be displayed, carry out a reference measurement at a known location: <ol style="list-style-type: none"> 1. Choose a site within the measuring range for this measurement. 2. Press the <i>HOLD/ZERO</i> button (9) for approx. 2 s to reset the saved measured values to zero. 3. Read the measured value from the measurement value display (20). If the error code is still displayed, the device may be defective. Please contact the Trotec customer service.
-OL	air pressure below the measuring range	
Error	air velocity or air volume flow below the measuring range	

Maintenance and repair

Battery change

A battery change is required when the battery status indication flashes or the device can no longer be switched on.

Change the battery, if required (see chapter Inserting the battery).

Cleaning

Clean the device with a soft, damp and lint-free cloth. Make sure that no moisture enters the housing. Do not use any sprays, solvents, alcohol-based cleaning agents or abrasive cleaners, but only clean water to moisten the cloth.

Repair

Do not modify the device or install any spare parts. For repairs or device testing, contact the manufacturer.

Disposal

Always dispose of packing materials in an environmentally friendly manner and in accordance with the applicable local disposal regulations.



The icon with the crossed-out waste bin on waste electrical or electronic equipment stipulates that this equipment must not be disposed of with the household waste at the end of its life. You will find collection points for free return of waste electrical and electronic equipment in your vicinity. The addresses can be obtained from your municipality or local administration. You can also find out about other return options that apply for many EU countries on the website <https://hub.trotec.com/?id=45090>. Otherwise, please contact an official recycling centre for electronic and electrical equipment authorised for your country.

The separate collection of waste electrical and electronic equipment aims to enable the re-use, recycling and other forms of recovery of waste equipment as well as to prevent negative effects for the environment and human health caused by the disposal of hazardous substances potentially contained in the equipment.



In the European Union, batteries and accumulators must not be treated as domestic waste, but must be disposed of professionally in accordance with Directive 2006/66/EC of the European Parliament and of the Council of 6 September 2006 on batteries and accumulators. Please dispose of batteries and accumulators according to the relevant legal requirements.

Only for United Kingdom

According to Waste Electrical and Electronic Equipment Regulations 2013 (SI 2013/3113) (as amended) and the Waste Batteries and Accumulators Regulations 2009 (SI 2009/890) (as amended), devices that are no longer usable must be collected separately and disposed of in an environmentally friendly manner.

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