Testo 405i

Testo 405i Anemometer User Manual

Model: 405i

1. Introduction

The Testo 405i is a compact, hot-wire anemometer designed for accurate measurement of air velocity, temperature, and volume flow. This instrument is particularly suited for in-duct measurements within air conditioning and HVAC systems. Its durable design, extendable telescopic shaft, and Bluetooth connectivity make it a practical tool for professionals.

Key features include:

- Accurate measurement of air velocity, temperature, and in-duct airflow.
- Automatic volume flow calculation when duct dimensions are provided.
- Hinged, telescopic shaft extendable up to 15 inches for difficult-to-access areas.
- Bluetooth 4.0 for wireless connection to smartphones or tablets.
- Integration with the Testo Smart Probes App for remote readings, data visualization (tables, graphs), and custom report generation.

Figure 1: The Testo 405i Anemometer, a compact device for air velocity and temperature measurements.

2. Package Contents

Verify that all items are present in the package:

- Testo 405i Bluetooth hot-wire anemometer
- 3 AAA batteries
- Certificate of conformity

3. Setup

3.1 Battery Installation

1. Locate the battery compartment on the device.
2. Open the compartment using the metal clip.
3. Insert the 3 AAA batteries, ensuring correct polarity. Remove any insulation strip if present.
4. Close the battery compartment securely.

3.2 App Download

The Testo 405i operates in conjunction with the Testo Smart Probes App. Download the app to your mobile device:

- For iOS devices: Download from the App Store (requires iOS 8.3 or newer).
- For Android devices: Download from the Google Play Store (requires Android 4.3 or newer).

Ensure your mobile device supports Bluetooth 4.0 for proper connectivity.

Figure 2: The Testo Smart Probes App displaying measurement data and indicating Bluetooth connectivity.

3.3 Device Pairing

1. Launch the Testo Smart Probes App on your smartphone or tablet.
2. Press the orange On/Off button on the Testo 405i to power it on. The status LED will blink yellow during the connection search.
3. The app will automatically detect and connect to the Testo 405i. The LED on the device will turn green when a successful connection is established.

Figure 3: Pressing the orange button to power on the Testo 405i.

4. Operating Instructions

4.1 Power On/Off

Press the orange button on the device to toggle power on or off.

4.2 Using the Telescopic Shaft

The Testo 405i features an extendable telescopic shaft. Gently pull the shaft to extend it up to 15 inches. The shaft can also be angled up to 180 degrees, allowing for flexible positioning in various measurement scenarios, such as inside ducts.

Figure 4: The extendable and rotatable telescopic shaft of the Testo 405i.

4.3 Performing Measurements

1. Ensure the Testo 405i is powered on and connected to the Testo Smart Probes App.
2. Insert the probe into the desired measurement location, such as an air duct or vent.
3. The app will display real-time measurements for air velocity and temperature.
4. For volume flow calculations, select the appropriate function in the app and input the duct dimensions (e.g., diameter for round ducts, width and length for rectangular ducts). The app will automatically calculate and display the volume flow.

Figure 5: Performing an in-duct measurement using the Testo 405i and viewing data on a smartphone.

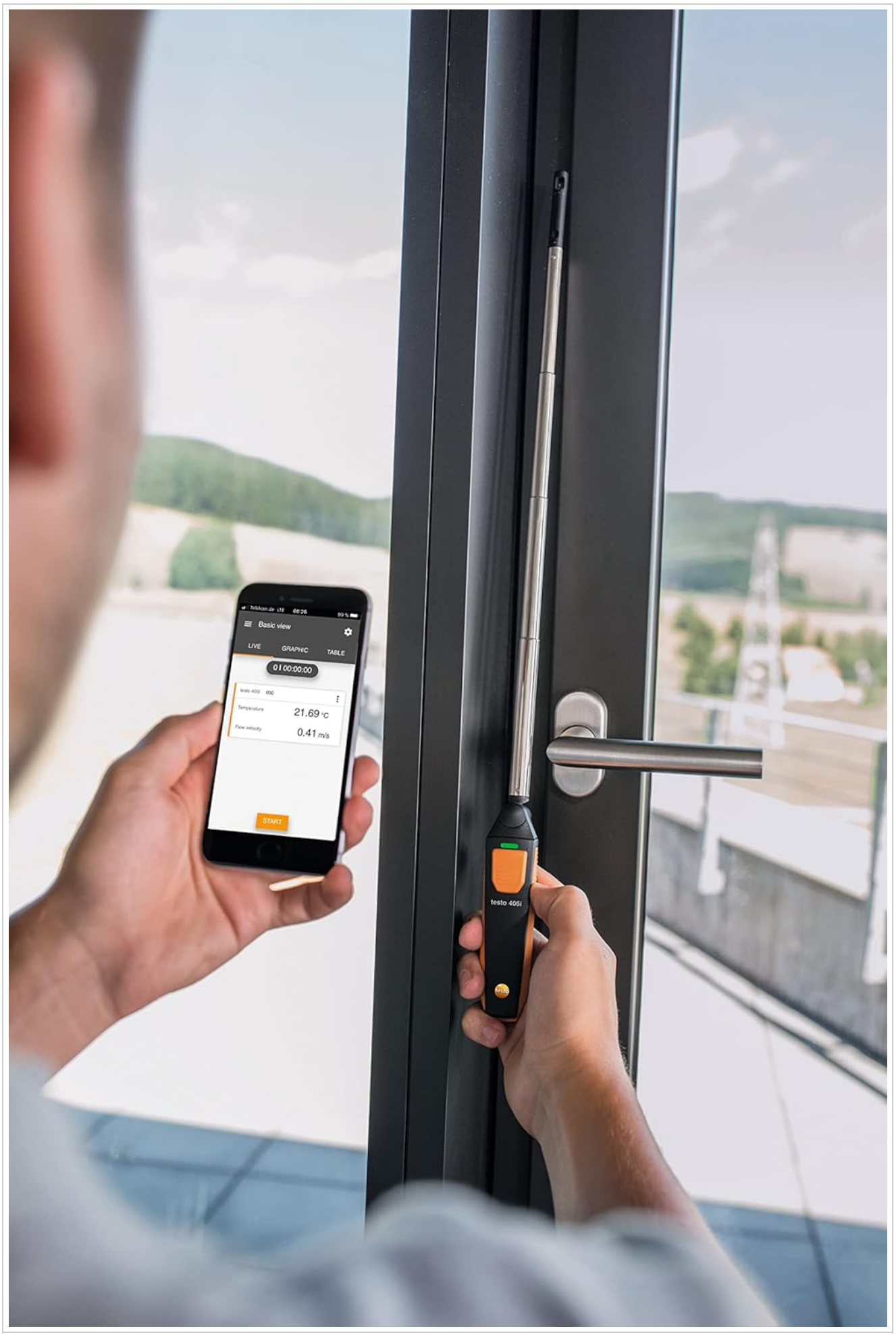


Figure 6: Example of using the Testo 405i for airflow measurement in an open environment.

4.4 App Functions and Data Management

The Testo Smart Probes App provides comprehensive functionalities:

- **Data Visualization:** View measurements as live instrument readings, detailed tables, or graphical trends.
- **Measurement Modes:** Conduct continuous, spot, or timed measurements.
- **Reporting:** Save measurement data as PDF or Excel (.csv) files. Create and customize reports directly within the app for easy documentation and sharing.

5. Maintenance

5.1 Cleaning

Regularly inspect and clean the sensor bulb to ensure accurate readings. Avoid any buildup of dust or debris on the sensor, as this can affect performance.

5.2 Storage

When not in use, retract the telescopic shaft and fold the device for compact storage. This protects the probe and ensures the device's longevity. Store the device in a clean, dry environment.

Figure 7: The Testo 405i's foldable design for portability and protection.

5.3 Battery Replacement

Replace the 3 AAA batteries when the status LED on the device blinks red, or when the Testo Smart Probes App indicates a low battery capacity. Refer to Section 3.1 for battery installation instructions.

6. Troubleshooting

6.1 Device Not Connecting to App

- Ensure Bluetooth is enabled on your mobile device.
- Verify the Testo 405i is powered on and within the Bluetooth range of your mobile device.
- Check that the Testo Smart Probes App is updated to its latest version.
- Confirm your mobile device meets the minimum system requirements (iOS 8.3+ or Android 4.3+ with Bluetooth 4.0).

6.2 Inaccurate Readings

- Inspect the sensor bulb for cleanliness and ensure it is free from any obstructions.
- Ensure the probe is correctly positioned in the airflow for optimal measurement.
- If calculating volume flow, verify that the correct duct dimensions have been accurately entered into the app.

6.3 Physical Damage

While designed for durability, the sensor bulb and its internal wiring can be sensitive to impacts. Handle the device with care to prevent damage from drops or excessive force. External damage may not always be visible, but internal components can be affected.

7. Technical Specifications

Specification	Value
Temperature Measuring Range	-4° to 140 °F / -20 to +60 °C
Temperature Measurement Accuracy	±0.9 °F / ±0.5 °C
Velocity Measuring Range	0 to 5906 fpm / 0 to 30 m/s
Velocity Measurement Accuracy (0 to 394 fpm / 0 to 2 m/s)	±(19.7 fpm + 5 % of mv) / ±(0.1 m/s + 5 % of mv)
Velocity Measurement Accuracy (394 to 2953 fpm / 2 to 15 m/s)	±(59.1 fpm + 5 % of mv) / ±(0.3 m/s + 5 % of mv)
Dimensions (L x W x H)	7.87 x 1.18 x 1.61 inches / 200 x 30 x 41 mm
Weight	4.22 oz. / 119.6 g
Power Supply	3 AAA batteries
Connectivity	Bluetooth 4.0
Material	Metal, Plastic
Model Number	0560 1405 01

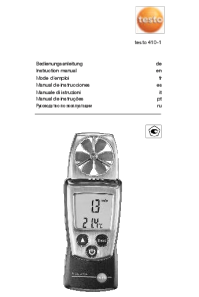
8. Warranty and Support

For detailed support, warranty information, and further documentation, please refer to the official Testo website or contact Testo customer service directly.

A comprehensive user manual in PDF format is also available for download:

Download User Manual (PDF)

Related Documents - 405i

	[Testo 521 Differential Pressure Manometer - High Precision Measurements] Explore the Testo 521 series of differential pressure manometers, offering high precision measurements for various applications including HVAC, cleanrooms, and ventilation systems. Learn about models 521-1, 521-2, and 521-3, their technical specifications, and available accessories.
	[Testo 417 Digital Vane Anemometer Instruction Manual] Comprehensive instruction manual for the Testo 417 Digital Vane Anemometer, covering setup, operation, measurements, maintenance, and troubleshooting.
	[Testo Smart Probes User Manual: Features, Specifications, and Operation] Comprehensive user manual for Testo Smart Probes, detailing features, technical specifications, safety guidelines, and operation principles for models like testo 405i, 410i, 510i, 549i, 605i, 115i, 905i, and 805i. Includes product overview, technical data, and approval information.
	[Testo 512-1 and Testo 512-2 Digital Differential Pressure Measuring Instruments Instruction Manual] This instruction manual provides comprehensive details for the Testo 512-1 and Testo 512-2 digital differential pressure measuring instruments, covering their intended use, operation, safety guidelines, and technical specifications for HVAC and maintenance applications.
	[Testo 512-1 and 512-2: Digital Differential Pressure Measuring Instruments Instruction Manual] Comprehensive instruction manual for the Testo 512-1 and Testo 512-2 digital differential pressure measuring instruments. Covers product features, intended use, operation via instrument and testo Smart App, technical specifications, and maintenance.
	[testo 410-1 Instruction Manual: Air Velocity & Temperature Measurement] Download the testo 410-1 instruction manual for detailed guidance on operating, setting up, and maintaining your air velocity and temperature meter. Includes technical specifications and safety information.