

REED

Model R3001

Anemometer/Manometer

Instruction Manual



www.reedinstruments.com

REED Instruments

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Features

- Measure and display air velocity, air flow volume, pressure and ambient temperature with a single, compact unit
- Air velocity displayed in m/s, fpm, km/h, mph or knots
- Air flow displayed in cfm or cmm
- Pressure displayed in psi, mbar, inH₂O, mmH₂O or Pa
- Temperature displayed in °C or °F
- Max., Min. and Avg. readings
- Real time clock provides for time-stamped measurements
- Push button calculation of rectangular or circular duct areas
- Large LCD display with backlight
- Auto power off and low battery indication
- USB interface

Specifications

Pressure Range:	±5000 Pa; 0.752 psi; 50.00mbar; 20.07 inH ₂ O; 509.8 mmH ₂ O
Pressure Resolution:	1 Pa; 0.0001 psi; 0.01 mbar; 0.01 inH ₂ O; 0.1 mmH ₂ O
Pressure Accuracy:	±0.3% FSO
Repeatability:	±0.2% FSO
Linearity/Hysteresis:	±0.29% FSO
Air Velocity Range:	1.00 to 80.00 m/s; 200 to 15,733 fpm; 3.6 to 288.0 km/h; 2.24 to 178.66 mph; 2.0 to 154.6 knots
Air Velocity Resolution:	0.01 m/s; 1 fpm; 0.1 km/h; 0.01 mph; 0.1 knots
Air Velocity Accuracy:	±2.5% rdg.
Air Flow Range:	0 to 99.999 ft ³ /min; 0 to 99.999 m ³ /min
Air Flow Resolution:	0.0001 to 100 ft ³ /min; 0.001 to 100 m ³ /min

continued ...

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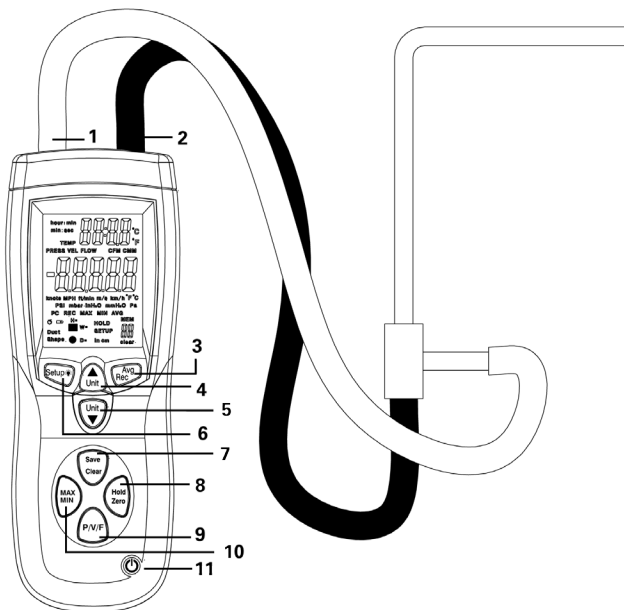
Air Flow Accuracy:	Function of air velocity and duct size
Temperature Range:	0 to 50.0°C; 32.0 to 122.0°F
Temperature Resolution:	0.1, C; 0.1°F
Temperature Accuracy:	±1.0°C; ±2°F
Power Supply:	Single 9V battery
Dimensions:	203 x 75 x 50mm
Includes:	Black and white silica tubes, Pitot tube, power adapter, USB cable, 9V battery, CD software and hard carrying case

For service on this or any other REED product or information on other REED products, contact REED Instruments at info@reedinstruments.com

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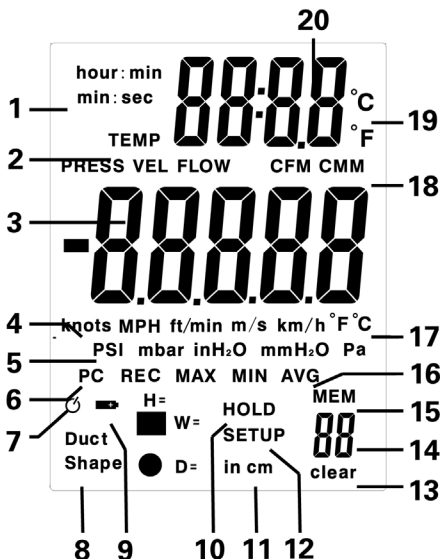
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Instrument Description



- | | |
|---------------------------|-----------------------------|
| 1. Input (-) port | 7. Save/Clear button |
| 2. Ref (+) port | 8. Hold/Zero button |
| 3. Average/Recall button | 9. P/V/F measurement button |
| 4. Up button | 10. Max/Min button |
| 5. Down button | 11. Power button |
| 6. Setup/Backlight button | |

Display Description



- | | |
|-----------------------------|---|
| 1. Time display setting | 11. Dimension unit |
| 2. Measurement mode | 12. Setup mode indicator |
| 3. Primary display | 13. Clear memory |
| 4. Air velocity unit | 14. Saved data number |
| 5. Pressure unit | 15. Memory indicator |
| 6. PC connection indicator | 16. REC, MAX, MIN and AVG indicators |
| 7. Auto power off indicator | 17. Temperature unit of primary display |
| 8. Duct shape | 18. Air flow unit |
| 9. Low battery indicator | 19. Temperature unit of second display |
| 10. Data hold indicator | 20. Temperature/time display |

Operating Instructions

Measuring Pressure

1. Press the power button to turn the meter on. Press the P/V/F button to enter Pressure Measurement mode. Press the Down button to select the unit of measurement.
2. Connect a single hose to the Input Port, leaving the Ref Port empty.
3. To ensure accuracy, zero out the unit before taking a measurement. With the input hose open to ambient conditions, press and hold the Hold/Zero button until the display states "0".
4. Place the input hose in the desired measurement location. Be sure to place the meter away from the measurement location or readings will not be accurate.
5. The meter will display the differential pressure of the input zone with respect to the reference zone. For example, a positive reading means that the input zone is positively pressured in respect to the meter location or its reference zone.

Measuring Velocity

1. Press the power button to turn the meter on. Press the P/V/F button twice to enter Velocity Measurement mode. Press the Down button to select the unit of measurement.
2. Connect the white hose to the Input Port on the meter and the total pressure connection on the pitot tube. Connect the black hose to the Ref Port on the meter and the static pressure connection on the pitot tube.
3. To ensure accuracy, zero out the unit before taking a measurement. With the Input and Ref hoses open to ambient conditions, press and hold the Hold/Zero button until the display states "0".
4. To take a measurement, face the pitot tube tip against the measured area. Ensure that the axis of the duct is aligned with the flow at $\pm 10^\circ$. If the readings come out negative and "Error" appears on the display, check that the hoses are attached to the correct ports on the meter and the pitot tube.

Measuring Flow

1. Press the power button to turn the meter on. Press the P/V/F button three times to enter Flow Measurement mode. Press the Down button to select the unit of measurement.
2. The screen will display the duct size and shape. The meter stores the last used duct size and shape. To change these settings refer to the Option Setup section.
3. Hold the meter up to the desired measurement location & read the measurements on the display screen.
4. Connect the white hose to the Input Port on the meter and the total pressure connection on the pitot tube. Connect the black hose to the Ref Port on the meter and the static pressure connection on the pitot tube.
5. To ensure accuracy, zero out the unit before taking a measurement. With the Input and Ref hoses open to ambient conditions, press and hold the Hold/Zero button until the display states "0".
6. To take a measurement, face the pitot tube tip against the measured area. Ensure that the axis of the duct is aligned with the flow at $\pm 10^\circ$. If the readings come out negative and "Error" appears on the display, check that the hoses are attached to the correct ports on the meter and the pitot tube.

Measuring Temperature

Ambient temperature is shown on the second display as a reference. The temperature can be displayed in either °C or °F. Press the Up button to select the unit °C or °F.

Hold Function

1. While taking a measurement, press the Hold/Zero button to freeze the display. The HOLD indicator will also appear on the display.
2. Press the Hold/Zero button again to turn off the Hold function.

Minimum, Maximum, and Average Readings

1. Press the Max/Min button to scroll through the maximum (MAX), minimum (MIN), or the average (AVG) readings. The elapsed time since entering MAX/MIN/AVG mode, or the time at which the minimum or maximum reading occurred will appear on the screen.
2. Press the P/V/F button to show the maximum, minimum, and average of the ambient temperature value and the pressure, velocity, or flow value.
3. Press and hold the Max/Min button for 2 seconds to exit MAX/MIN/AVG mode.

Saving Data

1. While taking a measurement, press the Save/Clear button to save the current data.
2. The meter can save up to 99 samples on each of the three measurement modes. If the memory is full, the meter will beep and display “FU” on the screen.

Recalling Saved Data

1. Press the P/V/F button to select what mode to recall saved data from.
2. Press and hold the Avg/Rec button to view saved data. The last measurement will appear first. Use the Up and Down buttons to scroll through the saved data.
3. Press the Avg/Rec button to view the average of all of the saved data.
4. Press and hold the Avg/Rec button to resume normal measuring.

Deleting Saved Data

1. Press the P/V/F button to select what mode to recall saved data from.
2. Press and hold the Avg/Rec button to view saved data. The last measurement will appear first. Use the Up and Down buttons to scroll through the saved data to select the reading that you wish to delete.
3. Press the Save/Clear button to delete the selected data. To delete all saved data refer to the Option Setup section.
4. Press and hold the Avg/Rec button to resume normal measuring.

Option Setup

1. Press and hold the Setup/Backlight button for 2 seconds to enter Setup mode. The screen will display SETUP.
2. Press the Up or Down button to scroll to the option you want to change.
3. Press the Ave/Rec button to select the option you want to adjust.
4. Adjust the setting with the Up and Down buttons, and press the Avg/Rec button to save.

NOTE: Option Setup is disabled in MIN/MAX/AVG mode.

Duct Dimension Units

1. While in Option Setup mode, scroll to the option displayed as "UNIT" on the screen.
2. Press the Avg/Rec button to select this option, and press the Up and Down button to switch between inches and centimeters.
3. Press the Avg/Rec button again to save the setting.

Duct Shape & Parameters Setting

1. While in Option Setup mode, scroll to the option displayed as “Duct Shape” on the screen.
2. Press the Avg/Rec button to select this option, and press the Up and Down button to switch between Rectangle and Circular.
3. Press the Avg/Rec button again to save the setting and to enter the Parameters Setting.
4. If duct is rectangle, the height of duct will be appear in the primary display, along with “H=”.
5. Press the Up or Down buttons to adjust the decimal point.
6. To adjust the numbers, press the Save/Clear button to move the flashing digit. Press Up or Down to change the flashing digit from 0 to 9.
7. Press the Avg/Rec button to save. “W=” will appear in the primary display indicating you are now adjusting duct width.
8. Press the P/V/F button to select the the decimal point.
9. To adjust the numbers, press the Save/Clear button to move the flashing digit. Press Up or Down to change the flashing digit from 0 to 9.
10. Press the Avg/Rec button to save the new parameters.
11. If duct is circular, the diameter of duct will be appear in the primary display, along with “D=”.
12. Press the Up or Down buttons to adjust the decimal point.
13. To adjust the numbers, press the Save/Clear button to move the flashing digit. Press Up or Down to change the flashing digit from 0 to 9.

Auto Power Off

1. By default the meter will automatically shut off after 20 minutes of inactivity. To change this, while in Option Setup mode, scroll to the option displayed as “SLEEP” on the screen.
2. Press the Avg/Rec button to select this option, and press the Up and Down button to switch between ON or OFF.
3. Press the Avg/Rec button again to save the setting.

Measurement Mode Setting

1. While in Option Setup mode, scroll to the option displayed as “TYPE” on the screen.
2. Press the Avg/Rec button to select this option, and press the Up and Down button to switch between Type 1, Type 2, and Type 3.
 - Type 1 displays Pressure and Air Velocity
 - Type 2 displays Air Velocity and Air Flow
 - Type 3 displays Pressure, Air Velocity, and Air Flow
3. Press the Avg/Rec button again to save the setting.

Clear all Saved Data

1. While in Option Setup mode, scroll to the option indicated by “CLEAR” on the screen.
2. Press the Save/Clear button to select this option, and press the Up and Down button to switch between the four options.
 - **PRESS VEL FLOW:** Delete all Pressure, Velocity, and Flow data
 - **PRESS:** Delete all Pressure data
 - **VEL:** Delete all Velocity data
 - **FLOW:** Delete all Flow data
3. Press the Up button to confirm, indicated by “YES”, and press the Avg/Rec button to delete selected data.

Error Codes

An error message will appear on the display if the meter fails an internal diagnostic test, which will also freeze all button function.

- **OL:** Pressure or air velocity value is over range
- **-OL:** Pressure value is below range
- **Error:** air velocity or air flow is below range

Battery Replacement

1. Turn off the meter
2. Loosen the screw on the rear of the meter and remove the battery door
3. Place new batteries in the battery compartment, replace the battery door and tighten the screw

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