

User's Guide

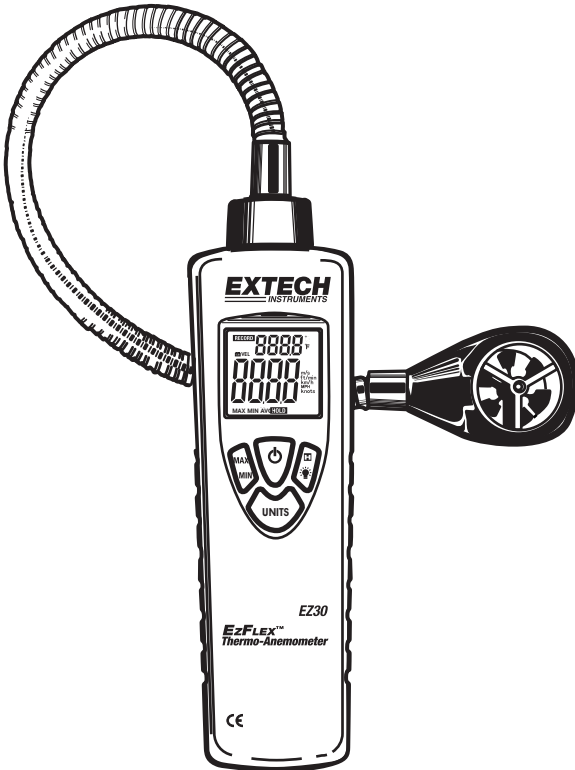
EXTECH
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EzFlex™ Thermo-Anemometer

Model EZ30



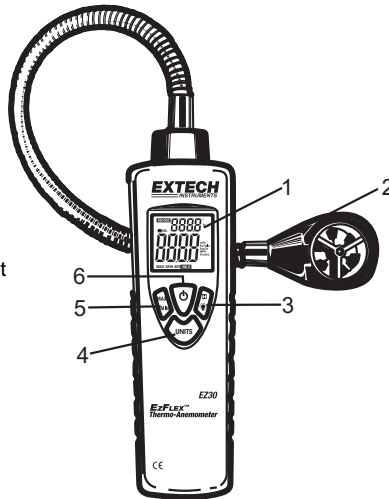
Introduction

Congratulations on your purchase of the Extech EZ30 Thermo-Anemometer. The EZ30 measures air velocity in five units of measure: feet per minute (ft/min), meters per second (m/sec), miles per hour (MPH), kilometers per hour (km/hr), & nautical miles per hour (knots). An internal Type K sensor allows the EZ30 to measure air temperature in Celsius or Fahrenheit units. The 16" (406mm) flexible gooseneck provides easy access for air velocity and temperature measurement in difficult to reach locations. This meter is shipped fully tested and calibrated and with proper use will provide years of reliable service.

Meter Description

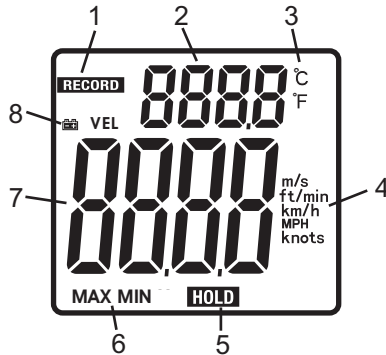
1. LCD display
2. Vane sensor
3. Hold/Backlight key
4. Units/°F/°C key
5. Max/Min key
6. On/Off key

Note: Battery compartment is on rear of unit



Display

1. MAX MIN Record mode
2. Temperature display
3. Temperature display
4. Velocity units
5. Hold mode
6. MAX or MIN mode
7. Velocity display
8. Low battery indicator



Operation

Meter Power

1. Press the POWER button to turn the meter on. If the display does not switch on, check that a fresh 9V battery is installed.
2. Press the POWER button to turn the meter off.
3. The meter is equipped with an AUTO POWER OFF feature. The meter automatically shuts off after 15 minutes to conserve battery energy. To disable this feature, hold down the UNITS key while turning the meter on. "disAPO" will appear in the display to indicate that Auto Power Off has been disabled.

Measuring Air Velocity and Temperature

1. Place the sensor in the air stream under test.
2. Read the Air Velocity and Temperature measurements directly on the LCD.
3. To calculate Air Volume in CFM (cubic feet per minute) or CMM (cubic meters per minute) refer to the 'Useful Equations and Conversions' section.

Selecting the Temperature unit of measure (°C/°F)

Press and hold the UNITS key for 3 seconds to select the temperature unit of measure. The meter will beep twice and the display will indicate the currently selected unit of measure.

Selecting the Air Velocity unit of measure

Press the UNITS key to change the unit of measure for Air Velocity measurements. The display will reflect the current selection. A list of measurement units is printed in the specifications later in this manual.

Data Hold/Backlight

To freeze the LCD display, momentarily press the HOLD key. The 'HOLD' icon will appear on the LCD and the reading will remain unchanged. Momentarily press the HOLD button again to return to normal operation (the 'HOLD' icon will switch off).


Press and hold the key for 3 seconds to turn the backlight on/off.

Record and Recall MAX / Min Function

1. To begin capturing the Maximum (MAX) and Minimum (MIN) air velocity and temperature readings, press the MAX/MIN key and the 'RECORD' icon will appear in the display.
2. Now, use the MAX/MIN key to toggle the view from MIN to MAX to RECORD. The 'MAX' or 'MIN' will appear along with the recalled reading for convenience. In RECORD mode, the meter will display the current reading but will continue to capture MAX and MIN readings.
3. To return to normal operation, press and hold the MAX/MIN key for 3 seconds to clear and stop MAX/MIN recording. The meter will beep twice and the 'MAX'/'MIN' and 'RECORD' icons will switch off.

Maintenance

Battery Replacement

When the battery power falls low, the low battery icon  will appear on the LCD. Replace the 9V battery by removing the Phillips screw on the battery compartment door and accessing the battery compartment. Ensure that the compartment cover is securely fastened when finished.

Cleaning and Storage

Wipe the meter and vane with a damp cloth as needed. Do not apply abrasive, solvents, or other cleaners to the surface of the meter or vane. Store with the battery removed and avoid extreme temperature and humidity.

Specifications

Circuit description	Custom LSI microprocessor design
Display	Dual function 9999 count LCD display
Measurement units	m/s, km/h, ft/min, knots, mph, Temperature: °C/°F
Data hold	Freezes reading on the display
Sensor Structure	Air velocity sensor: Conventional twisted vane arm with low-friction ball-bearing Temperature sensor: Type K
Memory Recall	Record and Recall Maximum/Minimum (MAX/MIN) readings
Auto Power off	After 15 minutes with disable feature
Operating Temperature	32 °F to 122 °F (0 °C to 50 °C)
Operating Humidity	Max. 80% RH
Power Supply	9V battery
Power Consumption	Approx. 8.3mA DC
Weight	7.4 oz (210g)
Dimensions	Main instrument: 6.42 x 1.77 x 1.34" (163 x 45 x 34mm) Sensor Head: 0.7" (17.8 mm) diameter

Air Velocity Range Specifications

Measurement	Range	Resolution	Accuracy (% of reading)
ft/min (feet per minute)	80 - 5900 ft/min	1 ft/min	± (3% + 40 ft/min)
m/s (meters per second)	0.40 - 30.00 m/s	0.01 m/s	± (3% + 0.20 m/sec)
km/h (kilometers per hour)	1.4 - 108.0 km/h	0.1 km/h	± (3% + 0.8 km/hr)
mph (miles per hour)	0.9 - 67.0 mph	0.1 mph	± (3% + 0.4 mph)
knots (nautical miles per hour)	0.8 - 58.0 knots	0.1 knots	± (3% + 0.4 knots)

Temperature Range Specifications

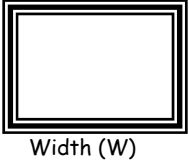
Range	Resolution	Accuracy
32°F to 122°F (0°C to 50°C)	0.1°F (0.1°C)	± 4.0°F (2°C)

Useful Equations and Conversions

Volume Measurements

To determine CFM (cubic feet per minute) or CMM (cubic meters per minute) in a duct, the area of the duct must first be measured (use the equations below). Then multiply an air velocity measurement by the area measurement to obtain CFM or CMM.

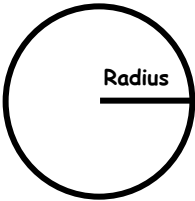
Area equation for rectangular or square ducts



Height (H)

$$\text{Area (A)} = \text{Width (W)} \times \text{Height (H)}$$

Area equation for circular ducts



$$\text{Area (A)} = \pi \times r^2$$

Where $\pi = 3.14$ and $r^2 = \text{radius} \times \text{radius}$

Cubic equations

$$\text{CFM (ft}^3\text{/min)} = \text{Air Velocity (ft/min)} \times \text{Area (ft}^2\text{)}$$

$$\text{CMM (m}^3\text{/min)} = \text{Air Velocity (m/sec)} \times \text{Area (m}^2\text{)} \times 60$$

NOTE: Measurements made in *inches* must be converted to *feet* or *meters* before using the above formulae.

Unit of Measure Conversion Table

	m/s	ft/min	knots	km/h	MPH
1 m/s	1	196.87	1.944	3.6	2.24
1 ft/min	0.00508	1	0.00987	0.01829	0.01138
1 knot	0.5144	101.27	1	1.8519	1.1523
1 km/h	0.2778	54.69	0.54	1	0.6222
1 MPH	0.4464	87.89	0.8679	1.6071	1

WARRANTY: EXTECH INSTRUMENTS CORPORATION warrants this instrument to be free of defects in parts and workmanship for one year from date of shipment (a six month limited warranty applies on sensors and cables). If it should become necessary to return the instrument for service during or beyond the warranty period, contact the Customer Service Department at (781) 890-7440 ext. 210 for authorization or visit our website at www.extech.com for contact information. A Return Authorization (RA) number must be issued before any product is returned to Extech. The sender is responsible for shipping charges, freight, insurance and proper packaging to prevent damage in transit. This warranty does not apply to defects resulting from action of the user such as misuse, improper wiring, operation outside of specification, improper maintenance or repair, or unauthorized modification. Extech specifically disclaims any implied warranties or merchantability or fitness for a specific purpose and will not be liable for any direct, indirect, incidental or consequential damages. Extech's total liability is limited to repair or replacement of the product. The warranty set forth above is inclusive and no other warranty, whether written or oral, is expressed or implied.

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