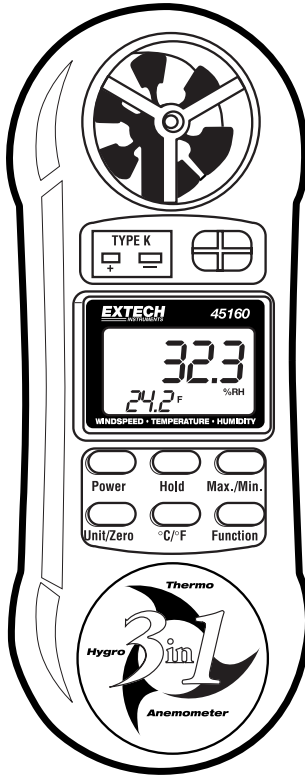User's Guide

EXTECH
INSTRUMENTS

3-in-1 Humidity, Temperature and Airflow Meter

Model 45160

Introduction

Congratulations on your purchase of Extech's Model 45160 3-in-1 Humidity, Temperature and Airflow Meter. The dual display indicates Air Velocity and Temperature or Humidity and Temperature. With careful use, this meter will provide years of reliable service.
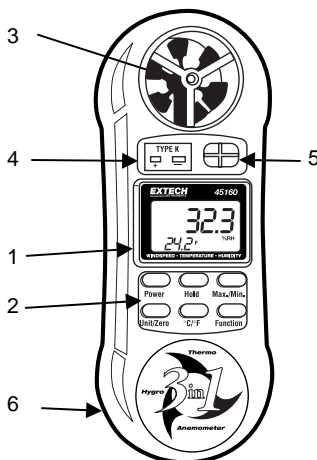
Specifications

Range Specifications

Measurement	Range	Resolution	Accuracy
MPH (Miles per hour)	0.9 to 67.0MPH	0.1MPH	
km/hr (kilometers per hour)	1.4 to 108.0 km/h	0.1km/h	$\leq$ 3937 ft/min: ±3% F.S.
Knots (nautical miles per hour)	0.8 to 58.3 knots	0.1knots	> 3937 ft/min: ±4% F.S
m/sec (meters per second)	0.40 to 30.00 m/s	0.1 m/s	
ft/min (feet per minute)	80 to 5910 ft/min	1ft/min	
Temperature/Thermistor	32 to 122°F (-0 to 50°C)	0.1°F/C	± 2.5°F (± 1.2°C)
Temperature /Thermocouple	-148 to 2372°F	0.1°F	± (1% + 2°F)
	-100 to 1300°C	0.1°C	± (1% + 1°C)
Relative Humidity	10.0 to 95.0%	0.1%	±4% RH (from 10% to 70%RH)
			±5.2% RH (> 70% RH)

General Specifications

Display	4 digit (9999 count) Dual Display LCD
Sensors	Thin film capacitance humidity sensor
Min/Max	Min/Max recalls the highest/lowest reading
Data Hold	Data Hold freezes the display
Operating conditions	32 to 122°F (0 to 50°C) / < 80% RH
Power supply	9 Volt Battery
Dimensions / Weight	Instrument: 6.14 x 2.36 x 1.29" (156 x 60 x 33mm) Vane: 1" (24mm) diameter / 3 oz. (95 g)

Meter Description

1. LCD display
2. Keypad
3. Vane
4. Thermocouple input jack
5. %RH sensor
6. Battery compartment (rear)

Turn Power ON

Press the power button to turn power on. The meter will perform a short self-test.

A. Airflow Measurements

1. Press the **Function** button to select the Anemometer function. In Air Flow mode, the display will show Air Velocity and Temperature.
2. Press **Unit** button to select desired unit of measure (FPM, MPH, KNOT, KM/H, or M/S)

B. %RH Measurements

1. Press the **Function** button to select %RH function. In %RH mode, the display will show %RH and Temperature.
2. Press the °**C/°F** button to select the desired temperature unit of measure.

C. Temperature Measurements

1. Press the **Function** button to select the Temperature function. In Temperature mode, the display will show only temperature.
2. Plug the thermocouple into the meter's thermocouple input jack. If no thermocouple is connected, or if the thermocouple is defective, the meter will display "-----". (Primary display temperature will only work if a thermocouple is connected).

MIN, MAX, Recording Function

Press the **Max/Min** button to begin capturing the Minimum (MN), and Maximum (MX), values. Press the **Max/Min** to view maximum and minimum recorded readings, Press and Hold the **Max/Min** button until the display returns to standard operation to exit the Max/Min function.

Data Hold

Press the **HOLD** button to freeze the reading in the display. The 'HOLD' icon will appear on the upper right-hand side of the display. Press the HOLD button again to return to normal operation (the 'HOLD' hold icon will disappear).
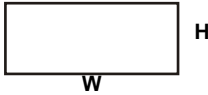
Auto Power OFF

The meter will automatically turn off after 10 minutes if no keys are pressed during this period. Auto power off is disabled in the max/min recording mode.
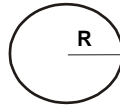
Turning Power OFF

Press the power button to turn power off.

Useful Equations

Area equations

$$A = W \times H \qquad A = pi \times R^2$$

Cubic equations

> **CFM (ft^3/min) = Air Velocity (ft/min) x Area (ft^2)**
>
> **CMM (m^3/min) = Air Velocity (m/sec) x Area (m^2) x 60**

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 to 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 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.

Calibration and Repair Services

Extech offers repair and calibration services for the products we sell. Extech also provides NIST certification for most products. Call the Customer Service Department for information on calibration services available for this product. Extech recommends that annual calibrations be performed to verify meter performance and accuracy.

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