APEX Premier

HIGH PERFORMANCE VELOCITY MONITOR

The APEX Premier Monitor ensures a safer operating environment for lab personnel with the most versatile fume hood and room transfer velocity monitor available. This monitor is suited for use on all types of fume hoods including Constant Volume, Variable Volume and High Performance Low Flow Hoods. The APEX Premier Monitor can also be used to monitor the velocity of transfer air between critical pressure controlled environments.

- Microprocessor-based performance
- Microbridge mass airflow sensor technology and advanced automated factory calibration system for unparalleled accuracy and performance
- LCD Graphic Matrix touch screen display
- Real-time graphical display of face velocity
- Built-in menu driven set-up and calibration routines
- Local visual, descriptive and audible alarms
- Programmable mute button
- Programmable output relays for Purge or Alarm
- Programmable digital inputs for Alarm or Setback

General Description

The Apex Premier utilizes state of the art technology to provide the highest level of performance achievable in a velocity monitor. The result is unparalleled reliability and simplistic operation. The **Heart** of the Apex Premier is the **Smart Sensor Module** which is responsible for accurate, repeatable and instantaneous measurement of fume hood face or room transfer velocity. The velocity measurement is made by an ultra-sensitive micro-bridge mass airflow sensor with a response time of less than 3 milliseconds. The analog signal provided by the micro-bridge is digitized by a high-resolution A/D converter and then further enhanced and factory calibrated over the operating velocity range by an automated test & calibration system. The resulting velocity measurement of the calibrated Smart Sensor Module is an extremely accurate and repeatable signal suitable for use in all fume hood applications.

The **Brain** of the Apex Premier is the **APEX Operating System (A-OS)** contained within its microprocessor core. The A-OS controls the configuration tool, on-board operations, and the user interface. Upon entry of a unique password code, the Apex Premier enters into set-up mode, which activates the matrix touch screen allowing access to the user-friendly start-up and calibration routines. The LCD Graphic display can be configured to provide visual feedback to the lab occupants using descriptive text messages, real-time numerical face velocity data or real-time graphical trend history data.

During the normal operating mode, the A-OS continuously processes sensor data and user settings, and determines the appropriate output responses to indicate operating and alarm conditions.

Integration to a central building automation system can be accomplished by on-board I/O points for alarm contacts or an analog signal for velocity. These points can provide remote indication of alarm conditions, velocity measurement, or initiate alarm setback during unoccupied modes of operation.

Tek-Air Systems, Inc.
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APM. 3-21-06

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General Specifications

DISPLAY
- **Type:** Graphic LCD matrix touch screen 128 x 64 pixels
- **Viewing Area:** 2.04" x 1.32"
- **Numeric Mode:** Displays real time face velocity
  - **Range:** 40 to 500 FPM
  - **Resolution:** Selectable for 1 FPM or 5 FPM
  - **Accuracy:** +/- 10% or 10 FPM max.
  - **Update Rate:** Selectable for slow, medium or fast
- **Alpha Mode:** Displays descriptive text indicating status
- **Graphical Mode:** Displays face velocity trend line
- **Display Units:** Imperial or Metric

AUDIBLE HORN
- **Sound Level:** 84 dB at 1-foot, Configurable to be active or inactive
- **Operation:** When active, horn sounds during alarm condition
- **Re-beep Mode:** Provides reminder horn muted and alarm not cleared

ALARM CONTACTS
- **Type:** Two independent SPST relays
- **Specifications:** 1A @ 30 VDC, 0.5A @ 125 VAC (resistive load) each
- **Operation:** Programmable to indicate purge or alarm condition
- Note: analog output option, relay one is 5A @250VAC or 30VDC

ANALOG OUTPUT (OPTIONAL)
- **Type:** Voltage output, proportional to face velocity measurements
- **Scaling:** 0 to 10VDC adjustable in 0.1VDC increments, proportional to 0 to 1000FPM adjustable in 1 fpm increments
- **Voltage Output:** Source 20mA max. factory calibrated (300K ohm load)

DIGITAL INPUTS
- **Type:** Two independent dry contact inputs
- **Operation:** Each input is user programmable
  - **Functions:** Annunciate external alarm or setback mode,
  - **Text Message:** Provide selectable text messages to the display
- **Time Delay:** Programmable to initiate after a user defined delay

PUSH BUTTONS
- **Mute:** Silences horn, programmable active/inactive
- **Purge:** Activates purge relay, programmable active/inactive
- **Scroll:** Enables user to review entire monitor configuration

AGENCY APPROVALS

CE Approved, UL Listed

INPUT POWER

24 VAC +/- 20% 50/60 Hz @ 8VA or 15VDC +/-20% @ 500mA

LED INDICATORS
- **Type:** 8mm diffused lens
- **Green:** Indicates normal condition, flashes for warning condition
- **Red:** Indicates alarm condition, flashes on mute
- **Yellow:** Indicates purge button has been depressed

ENVIRONMENT
- **Temperature:** **Storage:** 0°F to 150°F
  Operating: 40°F to 120°F
  Compensated: 60°F to 80°F
- **Humidity:** **Storage:** 10% to 90% RH, non-condensing
  Operating: 20% RH to 90% RH, non-condensing
- **Electromagnetic:** Conforms to EMC Standards EN61326 Class A

VELOCITY SENSOR
- **Type:** Micro-bridge mass flow sensor
- **Range:** Bidirectional +/- 1000 fpm
- **Response Time:** Typical 1 ms, maximum 3 ms
- **Accuracy:** +/- 0.35% reading, includes repeatability & hysteresis
- **Overpressure:** 25 PSI

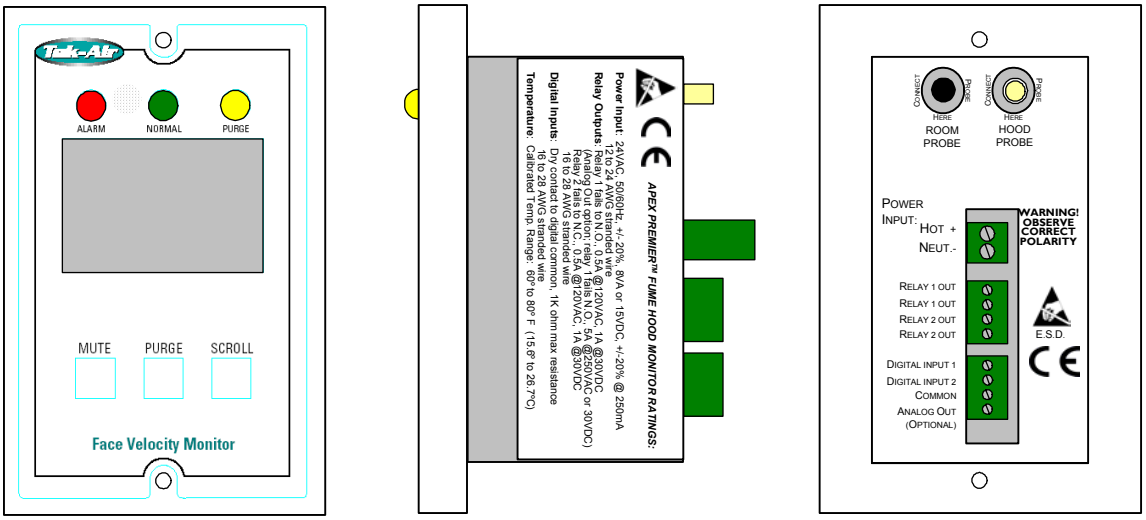
REFERENCE PROBE
- **Internal:** Integrated to display face, no external probe required
- **External:** Optional, consult factory

HOOD PROBE
- **Type:** 7/16" diameter, feed through bushing, press fit, 5' tubing
- **Material:** Polyethylene

TUBING
- **Type:** .170" ID ¼" OD Clear
- **Material:** Ester based polyurethane

PHYSICAL CHARACTERISTICS
- **Size:** Front bezel; 3.35" W x 5.1"H x 0.5"D
  Rear Enclosure; 2.5" W x 4.25"H x 3.5"D
- **Weight:** 1 lb.
- **Materials:** Front bezel; ABS
  Rear enclosure; 20 ga. sheet metal

Outline Drawing



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