H8301-AQM1 and H8301-AQM2 Air Quality Monitors
PM, CO2 , Temperature, RH, and TVOC

AIRY TECHNOLOGY

The Airy Technology® H8301-AQM1 and H8301-AQM2 Handheld Particle Counters were designed for cleanroom monitoring, indoor air quality, industrial hygiene, research, and health & safety applications. Their patented, feature-rich design enables dynamic environmental monitoring and versatile data reporting across multiple industries.

The H8301-AQMs measure particles from 0.3 to 25 µm in six user-selectable channels at a flow rate of 1.2 LPM. They offer data reporting in standard cleanroom formats or by mass concentration in µg/m³, with density and refractive index corrections. Included temperature and relative humidity probes, along with optional CO2 and TVOC sensors, provide comprehensive environmental monitoring.

With unique features like Particles/Second and the Real-Time Meter, the H8301AQMs enable efficient, on-the-go particle investigations across nearly any environment. These instruments can also operate as remote particle counters, leveraging their intelligent battery and power conservation modes to achieve up to 100 hours of battery life.

The Airy Technology® standardized hardware and firmware simplify maintenance and reduce the total cost of ownership. Combined with extensive remote diagnostics and a lifetime warranty, the H8301-AQMs ensure industry-leading performance and long-term value.
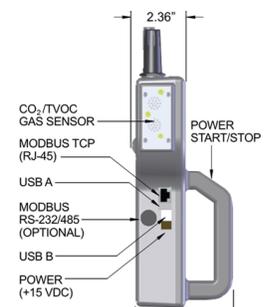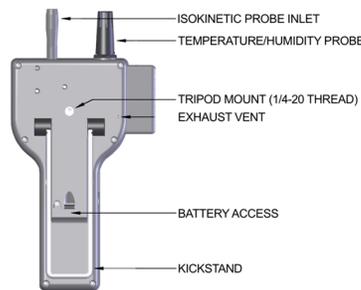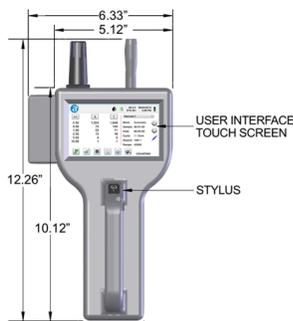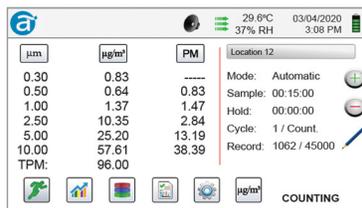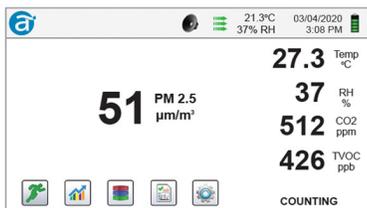
Features and Benefits

- Stores up to 45,000 sample records, 1,000 sample locations and 50 recipes
- Long life laser diode technology for reliable performance
- Approximates mass concentration in µg/m³ w/ density and refractive index corrections
- User selectable PM sizes from 0.3 µm to 10 µm including TPM of up to 25.0 µm
- Large, intuitive color touch screen display with an easy-to-use icon-driven interface
- Temperature and relative humidity probe included
- Resolve issues quickly from any location with internet-enabled remote diagnostics
- Annotation function allows user to save 32 character notations to a live sample record
- Over 10 hours continuous sampling on a single charge
- Integrated handle for one-handed operation
- Common interface ensures ease of use across all products
- Connect using Ethernet, USB, Wi-Fi (optional), RS 485 or RS232
- Displays user-definable reports for ISO 14644-1, EU GMP Annex 1 and FS 209E
- Built-in visual and audible alarms with comprehensive alarm management
- Complies with ISO 21501-4 and JIS B9921 standards
- Easy to clean and wipe down with minimal particle traps
- Equipped with a standard 1/4"–20 female mount for tripod compatibility
- Lightweight high-impact injection molded plastic enclosure
- 2 year Limited Warranty (Extended and Lifetime warranties available)

Specifications

Model	H8301-AQM1 and H8301-AQM2
Size Range	0.3 to 25 µm
Size Channels	Factory calibrated at 0.3, 0.5, 1.0, 2.5, 5.0, 10.0 µm variable binning
Flow rate / Accuracy	0.1 CFM (2.83 LPM)
Concentration Limits	15,000,000 particles/ft³ @ 10% coincidence (per ISO 21501-4) 30,000,000 particles/ft³ @ 10% coincidence (as tested and validated[1])
Aerosol Concentration Range	0.01 to 20,000 µg/m³
Battery Run Time	>10 hours continuous operation
Light Source	Long life laser diode
Counting Efficiency	50% @ 0.5 µm; 100% for particles >0.45 µm per JIS
Zero Count	<1 count / 60 minutes (<1 particles / 6 ft³). No fault count subtraction.
Count Modes	Particles/second, Real-Time Meter, cumulative/differential (count/m³ and count/ft³) and mass concentration (PM)
Count Alarms	1 to 9,999,999 counts
Calibration	NIST traceable
Display	4.3″ (10.9 cm) WQVGA (480×272) color touch screen
Optional Printer	External thermal printer available
Vacuum Source	Internal pump with automatic flow control
Filtered Exhaust	Internal HEPA filter
Number of Channels	6
Custom Size Channels	Calibration for custom size channels available
Audible Alarm	Adjustable integrated alarm
Communication Modes	Ethernet, USB, RS485, RS232, and (optional) 802.11b/g wireless
Environmental Sensors (AQM1)	Includes NDIR-CO2 sensor (0-5000 ppm ±1%, resolution 1 ppm, response rate 20 seconds), temperature (32-122°F, ±1°F / 0-50°C, ±0.5°C) and relative humidity probe (15–90% RH, ±2%)
Environmental Sensors (AQM2)	Includes all sensors in the 8300-AQM1 and PID-TVOC sensor (5 ppb - 50 ppm ±1.5%, response rate <3 seconds)
Alarm	Alarms for particle counts (any size channel), sensor failure, environmental sensors, and flow rate
Standards	ISO 21501-4 and JIS B9921
Instrument Calibration	Recommended minimum once per year
External Surface	Lightweight high-impact injection molded plastic enclosure
Dimensions (L x W x H)	6.33 x 4.25 x 12.26 in (16.1 x 10.8 x 31.1 cm) includes handle and does not include probes
Weight	2.5 lb (1.1 kg)
Accessories	User manual + Instrument Management Software (IMS) on USB flash drive, isokinetic probe, temperature relative humidity sensor, purge filter, battery, USB cable, and power supply
Optional Accessories	Printed manual, case, spare battery, external battery charger, external printer, barbed fitting, and tubing
Data Storage	Securely stores up to 45,000 samples with particle counts, environmental data, locations, and timestamps
Sample Time	1 second to 99 hours
Power	110 to 240 VAC 50/60 Hz universal in-line power supply
Operating Conditions	41-104ºF (5-40ºC) / 20% to 95% non-condensing
Storage Conditions	32-122ºF (0-50ºC) / Up to 98% non-condensing
Warranty	2 year Limited Warranty (Extended and Lifetime warranties available)

1- Validated by independent analysis see paper available at www.particlesplus.com/aac2022_paper

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