



Knowledge Beyond Measure.

TSI OmniTrak™ Solution

IAQ Modules



Smart Station and two modules are shown

Efficiency Meets Intelligence. Customizable, Scalable, and Affordable Monitoring.

The TSI OmniTrak™ Solution is a modular monitoring platform designed to support environmental and occupational exposure assessments. The TSI OmniTrak™ Indoor Air Quality (IAQ) Modules pair seamlessly with the Smart Station to collect, visualize, and report time-stamped measurement data during on-site studies. The TSI OmniTrak™ ecosystem also includes ultrafine particle counting with the TSI OmniCount™ Portable Water-based Condensation Particle Counter (PWPC) Models 3001 and 3002 and a Sound Level Meter (SLM) Class 2 module, enabling a unified approach to managing air quality, particle, and noise data within a single system.

Modules

- Smart Station
- VOC-PID (ppb)
- CO
- Cl
- HCHO
- O₃
- NH₃
- VOC-PID (ppm)
- PM
- PM + VOC-PID (ppm)
- Core Module (PM, VOC-EC (ppb), CO₂, RH, BP, Temp)

Features and Benefits

- Wireless connection for up to 10 modules simultaneously to a single Smart Station within 100m BLE range
- The Smart Station's intuitive touchscreen interface makes it easy to start studies, visualize live data and trends, and manage results all in one place
- Download data directly from the device onto your PC or upload data to our TSI Link™ cloud platform for easy accessibility
- Unique laser-based light scattering particle sensors – outputs mass concentration data and particle number concentration data separated into 5 distinct bins
- Precise 10.6 eV PID (photo ionization detector) for monitoring various VOCs (volatile organic compounds)
- VOC detection at low concentrations with the Core Module's electrochemical VOC Sensor
- The Core module includes onboard data-logging capability for independent operation and supports in-field calibration of VOC and CO₂ sensors for greater confidence in up to 24 hour studies and remote assessments. (Data-logging and in-field calibration are exclusive to the Core module.)

Applications

- **Indoor Air Quality and Ventilation:** Evaluate air quality in schools, offices, healthcare, and residential buildings. Assess ventilation performance, identify pollutant sources, and verify improvements after remediation or filtration upgrades.
- **Occupational and Environmental Health:** Monitor worker exposure to gases, particles, and sound in manufacturing, laboratory, and construction environments. Pair TSI OmniTrak™ modules with the TSI OmniTrak™ Sound Level Meter (SLM) for integrated health and safety assessments.
- **Industrial Process and Quality Control:** Track temperature, humidity, CO₂, and particulate levels that impact production consistency and product quality. Pair with TSI OmniCount™ system for applications where ultrafine particle monitoring is needed.
- **Field and Multi-Zone Studies:** Deploy multiple modules to map conditions across rooms or facilities. Generate time-synchronized data using TSI Link™ Report Creator for visual comparisons, spatial mapping, and trend analysis.



IAQ Module Sensor Specifications

Sensor Model	Sensor Type	Range	Accuracy	Resolution	*Response Time	
Core Module Model 7591-05	Carbon Dioxide (CO ₂)	NDIR (non-dispersive infrared)	400 - 10,000 ppm	+/- 3% of reading + 30 ppm (typical)	1 ppm	45 seconds
	Barometric Pressure (BP)	Piezoresistive	7.7 - 37.2 in Hg (260 - 1260 hPa)	± 0.12 in Hg (+/- 4.1 hPa)	0.01 in Hg (0.1 hPa)	—
	Relative Humidity (RH)	—	5 - 95% RH	+/- 5% RH	0.1% RH	—
	Temperature (T)	—	0 - 60 °C 32 - 140 °F	+/- 0.5°C +/- 0.9°F	0.10°C 0.18°F	—
	PM Sensor	See separate PM Sensor Specifications				
	VOC-EC (ppb) Sensor	Electrochemical	0-10,000 ppb	—	1 ppb	315 seconds
VOC-PID (PPB) Module Model 7591-03	10.6 eV PID PID (Photo Ionization Detector)	0 - 20,000 ppb	—	1 ppb	15 seconds	
VOC-PID (ppm) Module Model 7591-02	10.6 eV PID PID (Photo Ionization Detector)	0 - 2,000 ppm	—	0.1 ppm	10 seconds	
PM + VOC-PID (ppm) Module Model 7591-04	VOC-PID (ppm)	10.6 eV PID PID (Photo Ionization Detector)	0 - 2,000 ppm	—	0.1 ppm	10 seconds
	PM Sensor	See separate PM Sensor Specifications				
Ammonia (NH ₃) Module Model 7591-11	Electrochemical	0 - 100 ppm	+/- 10 ppm	0.1 ppm	300 seconds	
Carbon Monoxide (CO) Module Model 7591-06	Electrochemical	0 - 400 ppm	15% + 2 ppm	0.1 ppm	30 seconds	
Chlorine (Cl ₂) Module Model 7591-10	Electrochemical	0 - 20 ppm	5% + 0.8 ppm	0.01 ppm	50 seconds	
Formaldehyde (HCHO) Module Model 7591-07	Electrochemical	0 - 10 ppm	2% + 1 ppm	0.01 ppm	300 seconds	
Ozone (O ₃) Module Model 7591-08	Electrochemical	0 - 20 ppm	15% + 1.5 ppm	0.01 ppm	50 seconds	

Measurement specifications apply at ambient conditions of 21 +/- 5 °C temperature, 98.6 +/- 5 kPa pressure, and 50 +/- 10% relative humidity.
*typical time to 90% of final value unless otherwise stated

PM Module Sensor Specifications

PM Modules

Models: 7591-01 PM Module, 7591-04 PM + VOC-PID (ppm) Module, 7591-05 Core Module

Particle Counter			
Concentration Range	0 to 3,000 (0 to 84,950,000)	—	#/cm ³ (#/ft ³)
Particle Bins and Particle Size Range (NC = Number Concentration)	NC0.5	0.3 to 0.5	µm
	NC1.0	0.5 to 1.0	µm
	NC2.5	1.0 to 2.5	µm
	NC4	2.5 to 4.0	µm
	NC10	4.0 to 10.0	µm
Concentration Precision ¹ for PM0.5, PM1, and PM2.5 ²	0 to 1,000 #/cm ³ (0 to 28,320,000 #/ft ³)	±100 (±2,832,000)	#/cm ³ (#/ft ³)
	1000 to 3000 #/cm ³ (28,320,000 to 84,950,000 #/ft ³)	±10	% m.v.
Concentration Precision ¹ for PM4, PM10 ³	0 to 1000 #/cm ³ (0 to 28,320,000 #/ft ³)	±250 (±7,080,000)	#/cm ³ (#/ft ³)
	1000 to 3000 #/cm ³ (28,320,000 to 84,950,000 #/ft ³)	±25	% m.v.
Particulate Mass			
Concentration Range	0 to 1,000	—	µg/m ³
Mass Concentration Bins and Particle Size Range	PM1.0	0.3 to 1.0	µm
	PM2.5	0.3 to 2.5	µm
	PM4.0	0.3 to 4.0	µm
	PM10.0	0.3 to 10.0	µm
Mass Concentration Precision ¹ for PM1, and PM2.5 ²	0 to 100 µg/m ³	± [5 µg/m ³ + 5 % m.v.]	
	100 to 1000 µg/m ³	±10	% m.v.
Mass Concentration Precision ¹ for PM4, PM10 ³	0 to 100 µg/m ³	±25	µg/m ³
	100 to 1000 µg/m ³	±25	% m.v.

Response time for both Particle Counter and Particle Mass: t90 < 13 seconds

¹ Also referred to as "between-parts variation" or "device-to-device variation".

² Verification Aerosol for PM2.5 is a 3% atomized KCl solution. Deviation to reference instrument is verified in end-tests for every sensor after calibration.

³ PM4 and PM10 output values are calculated based on distribution profile of all measured particles.

Specifications

TSI OmniTrak™ Solution

IAQ Modules

Power Requirements *

Input Power	10 W
Input Voltage	5 VDC
Charging Port	USB C

Environmental/Installation Requirements*

Maximum Altitude	3,000 m (10,000 ft)
Pollution Degree	2
Installation Category	I
Operating Temperature	5°C to 40°C
Storage Temperature	-20°C to 60°C
Humidity	0% to 95% (non-condensing)
BLE Range**	up to 100 m (328 ft)

Battery Life

Core Module	15 hrs.
Standard Modules	18 hrs.
Smart Station	14 hrs.

Weight

Core Module	0.18kg (0.38lbs)
Standard Modules	.17 kg (.37 lbs)
Smart Station	.36 kg (.79 lbs)

Dimensions

Core Module	85 x 35 x 127 mm
Standard Modules	85 x 35 x 73 mm
Smart Station	85 x 35 x 175 mm

Sample Interval

Standard and Core Modules	Every 1 sec
Core Module CO ₂	Every 5 sec

* Applies to both Smart Station and Modules

** Range is dependent on many variables (i.e. wireless traffic, metal, etc.) and can not be guaranteed.



Accessory Options

Description

- Small Case for Smart Station
+ 2 Modules (Core or Standard)
- Large Case for Smart Station
+ 5 Modules (Core or Standard)
- OmniTrak Kick Stand, Hand & Wrist Strap
- Core calibration shroud

Specifications are subject to change without notice.

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