



ultraPURE Sensor Guide

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SUB-0014 | Duct Temperature Probe



Product Data

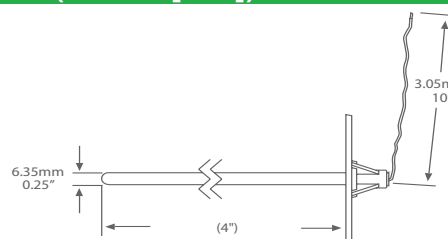
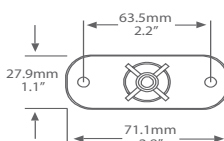
SEN-0012 - DUCT TEMPERATURE PROBE

Product Description

The SEN-0012 single point duct temperature sensor utilizes a precision sensor encapsulated in a 6.35 mm (0.25") OD, 304 series stainless steel 4" probe. The probe provides excellent heat transfer, fast response and resistance to moisture penetration. The SEN-0012 comes with an integrated mounting bracket and 3.05 m (10') of plenum rated cable for connection to the Building Automation System.



Product Dimensions (inches [mm])



Product Specifications

SENSOR TYPE	Thermistor (10,000 Ω Type 2, NTC Thermistor, $\pm 0.2^{\circ}\text{C}$)
TEMPERATURE RANGE	-20 to 60°C (-4 to 140°F) (higher ranges available, contact iAIRE)
WIRE MATERIAL	FT-6 rated plenum cable, 22 AWG
WIRE LENGTH	3.05m (10')
PROBE MATERIAL	304 series stainless steel
PROBE DIAMETER	6.35mm (0.25")
BRACKET MATERIAL	ABS, UL94-V0
TERMINATION	Pigtail 2 wire
COUNTRY OF ORIGIN	Canada

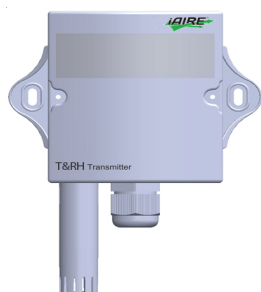
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SUB-0018 | Duct Temp/Humidity Sensor



Product Data

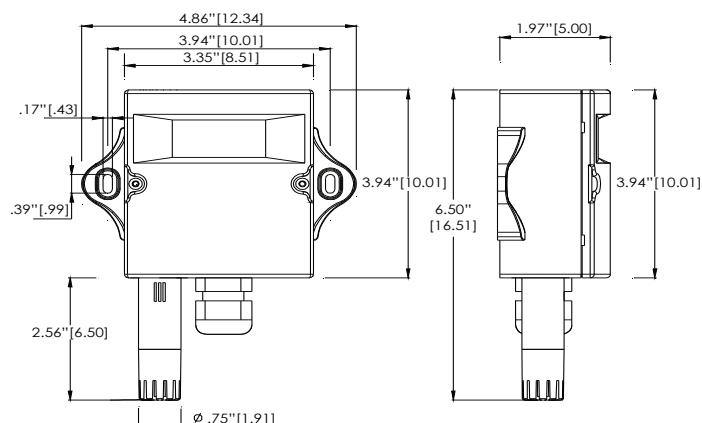
SEN-0053 | Duct Temp/Humidity Sensor



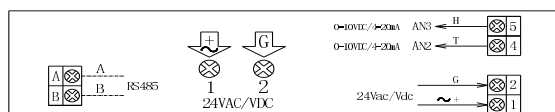
Product Application

- High end HVAC
- Clean Rooms
- Green Houses
- Stocks
- Ability to determine enthalpy in HVAC system.
- Other locations needing to measure temperature and humidity.

Product Dimensions (inches [cm])



Wiring Diagram



Technical Data

	Temperature	Relative Humidity
Power Supply	24 VDC/24V AC $\pm 20\%$	
Power Consumption	$\leq 1.6W$	
Accuracy	$\pm 0.4^{\circ}C$ ($0^{\circ}C \sim 50^{\circ}C$)	$\pm 3\%RH$ (20%-80%RH)
Measuring range	$0^{\circ}C \sim 50^{\circ}C$ ($32^{\circ}F \sim 122^{\circ}F$) (default)	0-100%RH
Stability	$\pm 0.1^{\circ}C$	$\pm 1\%RH$ per year
Longtime storage environment	$10^{\circ}C - 50^{\circ}C$	20%RH \sim 60%RH
Output	2x0~10VDC (default) or 2x4~20mA(selectable by jumpers) 2x0~5VDC (selected when order is placed)	
RS485 interface (optional)	Modbus RS485 interface	
Permissible load	Max. 500 Ω (4~20mA)	
Connection	Screw terminals / wire diameter: 1.5mm ²	
Housing/Protection class	PC/ABS fireproof material / IP30	
Dimension	3.35 in x 3.94in x 1.97in (external probe) x ϕ 0.75in	
Net weight	.62lb	

SUB-0019 | Space CO₂ Sensor



Product Data

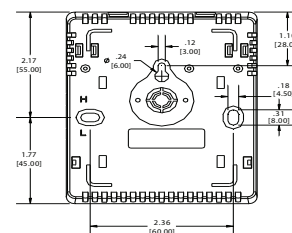
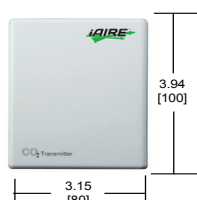
SEN-0002 | Space CO₂ Sensor

Product Description

The CO₂ detector provides real-time CO₂ levels and is designed for basic application in HVAC and ventilation systems applications.



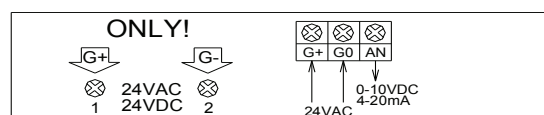
Dimensions (inches [mm])



Technical Data

Gas detected	Carbon Dioxide (CO ₂)
Sensing element	Non-Dispersive Infrared Detector (NDIR)
Accuracy @ 25°C(77°F)	±75ppm + 3% reading
Stability	<2% of FS over life of sensor (10 yr typical)
Calibration	Self calibration inside
Response time	<2 minutes for 90% step change
Warm up time	10 minutes (first time) 30 seconds (operation)
CO ₂ measuring range	0~ 2,000ppm
Sensor life	>10 years
Power supply	24VAC/24VDC
Consumption	3.6 W max. ; 2.4 W avg.
Analog outputs	1X0~10VDC linear output or 1X0~10VDC /4~20mA selectable by jumpers
Modbus interface	Modbus RS485 interface 9600/14400/19200(default)/28800 or 38400bps
Operation conditions	0~50°C(32~122°F); 0~95%RH, non condensing
Storage conditions	0~50°C(32~122°F)
Net weight	160g

Wiring Diagram



SUB-0015 | Space VOC Sensor



Product Data

SEN-0071 - Space VOC sensor

Product Description

Indoor Air Quality-IAQ is a comprehensive concept involving various indoor gases and different kinds of low concentration pollutants. To detect and indicate IAQ level has become more and more important for the sake of establishing and maintaining healthy working and living environment.

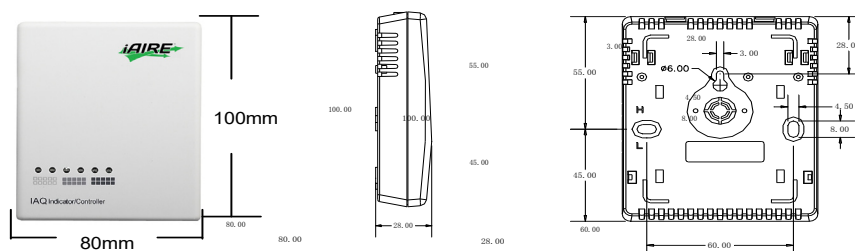
The SEN-0071 is specially designed to detect room IAQ level with a Modbus RS485 and an optional linear analog output, as well as an optional relay output to control a ventilator or an air cleaner based on the pre-set measurement.

Its internal mixed gas sensor (normally called VOC sensor) is very sensitive to VOC concentration in the air (VOC i.e. Volatility Organic Compound, such as timber dope and toluene emitted by building materials), and other air pollutants such as cigarette smoke, ammonia and H_2S . It also has high sensitivity to CO, alcohol, natural gas and odorous smells from human bodies. Compared with other single air sensor, SEN-0071 is better for longtime IAQ detection.

SEN-0071 can also be used as a controller in application of ventilation and air conditioning systems to improve indoor air quality and to achieve the best energy saving.



Product Dimensions (mm)



Features

Product Application

- Online real-time detecting indoor air quality.
- Green Building Assessment
- BAS and HVAC
- Smart Home System
- Fresh Air Controlling System
- Building Energy Saving Reconstruction and Assessment System
- Classroom, office, exhibition hall, shopping mall, other public places

NOTE: SEN-0071 detector cannot be used as a safety detector, for example, gas alert detector.

- Wall mounting, real time detect indoor air quality
- With Japanese semiconductor mix gas sensor inside. 5~7 years lifetime.
- High sensitive to contaminative gases and various kinds of odorous gases within the room (smoke, CO, alcohol, human odor, material odor).
- Six indicator lights to indicate six different IAQ ranges.
- Temperature and humidity compensation makes the IAQ measurements consistent.
- Modbus RS-485 communication interface, 15KV antistatic protection, independent address setting.
- Optional one on/off output to control a ventilator/air cleaner. The user can select an IAQ measurement to turn-on the ventilator between four setpoints.
- Optional one 0~10VDC or 4~20mA linear output.

SUB-0015 | Space VOC Sensor (cont'd)

Technical Specifications

Gas detected	VOCs (toluene emitted from wood finishing and construction products); Cigarette smoke (hydrogen, carbon monoxide); ammonia and H ₂ S, alcohol, natural gas and human odor.
Sensing element	Semiconductor mix gas sensor
Measuring range	1~30ppm
Power Supply	24VAC/VDC
Consumption	2.5 W
Load (for the analog output)	>5K
Sensor query frequency	Every 1s
Warm up time	48 hours (first time) 10 minutes (operation)
Six indicator lights	The first green indicator light: Best air quality The first and the second green indicator lights: Better air quality The first yellow indicator light: Good air quality The first and the second yellow indicator lights: Poor air quality The first red indicator light: Poorer air quality The first and the second red indicator lights: Poorest air quality
Modbus interface	RS485 with 19200bps(default), 15KV antistatic protection, independent base address
Analog output (Optional)	0~10VDC linear output
Output resolution	10Bit
Relay output (Optional)	One dry contact output, rated switching current 2A (resistance load)
Temperature range	0~50°C (32~122°F)
Humidity range	0~95%RH, non condensing
Storage conditions	0~50°C (32~122°F) /5~90%RH
Weight	190g
Dimensions	100mm×80mm×28mm
Installation standard	65mm×65mm or 2"×4"wire box
Wiring terminals	Maximum 7 terminals
Housing	PC/ABS Plastic fireproof material, IP30 protection class
CE approval	EMC 60730-1: 2000 +A1:2004 + A2:2008 Directive 2004/108/EC Electromagnetic Compatibility

SUB-0016 | Duct VOC Sensor



Product Data

SEN-0072 | Duct VOC Sensor

Product Description

Air Quality (VOC)

The air quality sensor is a mix gases sensor with high sensitivity for VOC (kinds of volatile pollutant gases) such as ammonia, toluene, formaldehyde and cigarette smoke, alcohol, H₂S, and carbon monoxide. So it is very suitable to detect the general indoor air quality in real time and long term. It responds quickly to any change of the concentration of such gases.

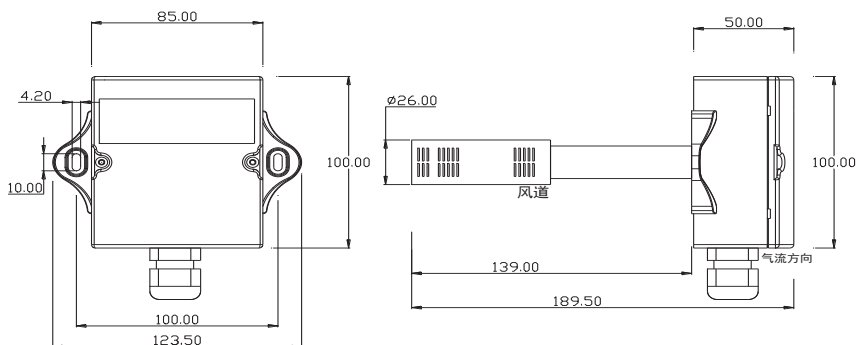
- Built in semi-conductor mix gases sensor
- 5~7 years life time
- High sensitive to volatile gases like ammonia, toluene, formaldehyde, cigarette smoke, alcohol, H₂S, etc.
- Small volume, lower consumption

Temperature and humidity

Combined digital temperature and humidity sensor with high accuracy and stability. It also has compensation to CO₂ and air quality which makes the measurements more accurate by minimizing environmental effects.



Product Dimensions (mm)



Product Application

- Residential houses, exhibition halls, restaurants, shopping malls, sports gymnasiums, conference rooms, etc.
- Museums, theaters, offices, classrooms, train stations, airports, etc.

Product Features

- Designed for real time detecting carbon dioxide, air quality, temperature or relative humidity in air ducts.
- NDIR infrared CO₂ sensor inside with special Self Calibration and up to 15 years' lifetime. It makes CO₂ measurement more accurate and reliable.
- Mix gases sensor with high sensitivity for VOCs from new furnitures, wall coverings, office equipment, cleanser etc. and other pollutants from smoking and cooking etc.
- Combined temperature and humidity digital sensor provides a high accuracy measurement in full range.
- Provide up to 3 analog outputs (0~10VDC or 4~20mA or 0~5VDC) for CO₂, air quality (VOC) and temperature or relative humidity.
- Modbus RS485 interface with outputs for CO₂, temperature, humidity and air quality (VOC).
- With LCD or without LCD selectable
- LCD display real-time measurements of CO₂, air quality (VOC), temperature and relative humidity.
- Simple and smart design and installation of sensor probe with a water-proof and porous film
- Extendable probe fits more air duct systems
- 24VAC/VDC power supply.
- EU standard and CE-approval.

SUB-0016 | Duct VOC Sensor (cont'd)

Detection Focus

Carbon Dioxide (CO₂)

Indoor CO₂ level is a universal accepted parameter for the condition of indoor ventilation and air quality.

A time period can be preset from 1 to 24 hours, e.g. 5 hours, then the monitor can display CO₂ average level during this period, which provides an objective and true data for the measurement of the air quality in a certain space.

- Non-dispersive infrared (NDIR) CO₂ sensor with more than 10-year lifetime
- ABC self-calibration technology guarantees reliable CO₂ measurement
- CO₂ range: 0~2000ppm/0~5000ppm optional
- Rapid response, high stability and consistency

Technical Specifications

Monitoring parameters	CO ₂	Air Quality (VOC)	Temperature	Relative humidity
Sensing element	Non-Dispersive Infrared Detector (NDIR)	Semiconductor mix gases sensor	Digital combined temperature and humidity sensor	
Measuring range	0~2000ppm(default) 0~5000ppm (selectable in the order)	0~30ppm	0℃~50℃ (32℉~122℉) (default)	0~100%RH
Display Resolution	1ppm	5ppm	0.1℃	0.1%RH
Accuracy@25℃(77℉)	±50ppm + 3% of reading	-----	±0.4℃ (0℃~50℃)	±3%RH (20%-80%RH)
Life time	15 years (normal)	5~7 years	10 years	
Calibration cycle	ABC Logic Self Calibration	-----	-----	-----
Response Time	<2 minutes for 90% change	<1 minute (for 10ppm hydrogen, 30ppm ethanol) <5 minute (for a cigarette) in 20m ² room	<10 seconds to reach 63%	
Warm up time	2 hours (first time) 2 minutes (operation)			
Electrical Characteristics				
Power supply	24VAC/VDC			
Consumption	3.5 W max. ; 2.5 W avg.			
Analog Outputs	Two or three analog outputs 0~10VDC (default) or 4~20mA (selectable by jumpers) 0~5VDC (selected at place the order)			
Modbus RS485 interface	RS-485 with Modbus protocol, 19200bps rate, 15KV antistatic protection, independent base address			
Conditions of Using and Installation				
Operating conditions	0~50℃ (32~122℉); 0~95%RH, non condensing			
Storage conditions	0~50℃ (32~122℉) / 5~95%RH			
Weight	320g			
Installation	Fixed on the air duct with 100mm installation hole size			
IP class of the housing	PC/ABS IP50 for models without LCD; IP40 for models with LCD			
Standard	CE-Approval			

SUB-0020 | Space PM Sensor



Product Data

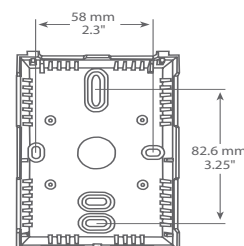
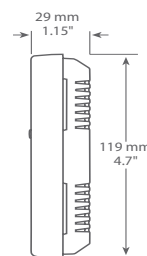
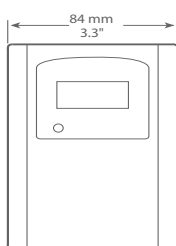
SEN-0074 - Space PM Sensor

Product Description

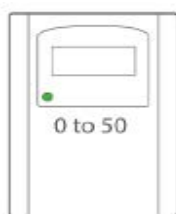
The SEN-0074 Particulate Matter Sensor uses an optical sensor based on laser scattering principles and features innovative contamination resistance technology to perform highly accurate and reliable PM measurements. The replaceable sensor measures particles of PM1.0, PM2.5, PM4.0, and PM10, with a continuous operation lifetime of more than 8 years. The sensor will provide long-term reliability and high resolution particle size binning for the detection of environmental dust and other particles.



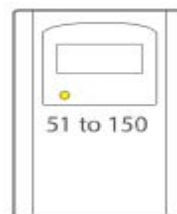
Product Dimensions (mm)



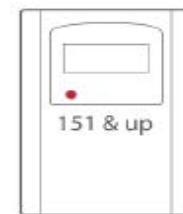
LED Display: Air Quality Index Values



0 to 50: Good



51 to 100: Moderate
101 to 150: Unhealthy for Sensitive Groups



151 and higher: Unhealthy

MCERTS Certification



The SEN-0074 incorporates the SPS30 PM sensor for accurate and reliable PM sensing. The SPS30 particulate matter sensor has achieved MCERTS certification, which proves the performance of the PM sensor. In addition, the certification confirms that the SPS30 can be easily integrated into applications that comply with the European Air Quality Standard DIN EN 15267.

The MCERTS certification scheme was established by the UK's Environment Agency and is built around international and European standards to ensure high-quality environmental data monitoring. The SPS30 underwent laboratory and field tests and has been proven to fulfill the latest MCERTS and associated DIN EN 15267 European air quality standards. Compliance with the above-mentioned standards requires low intra-model variability ($\leq 5 \mu\text{g}/\text{m}^3$), making the SPS30 the first choice for integration into applications requiring high precision. The certification is issued by the Sira Certification Service, one of the leading notified bodies in Europe. They are also accredited according to ISO/IEC 17065 UKAS and are part of the Canadian Standards Association (CSA Group).

Learn more about the MCERTS certification on the website of CSA Group or have a look at the certificate as linked below.

Website: <https://www.csagroupuk.org/services/mcerts/mcerts-product-certification/mcerts-certified-products/mcerts-certified-products-indicative-ambient-particulate-monitors/>

Certificate: https://www.sensirion.com/fileadmin/user_upload/customers/sensirion/Dokumente/9.6_Partikulate_Matter/Datasheets/Sensirion_PM_Sensors_Datasheet_SPS30_MCERTS-Certificate_2020.pdf

SUB-0020 | Space PM Sensor (cont'd)

Technical Specifications

SENSOR	Laser scatter method (field replaceable)
PARTICULATE SIZE	PM1.0, PM2.5, PM4.0, or PM10 (selectable)
MASS CONCENTRATION RANGE	0 - 1000 ug/m ³
RESOLUTION	1 ug/m ³
ACCURACY	±10 ug/m ³ (0 - 100 ug/m ³), ±10% (100 - 1000 ug/m ³)
RESPONSE TIME	1 second
SENSOR LIFETIME	>8 years
ANALOG MODEL	Consumption: 75 mA max @ 24 Vdc, 100 mA max @ 24 Vac Output Signals: 4-20 mA (sourcing) or 0-5 Vdc / 0-10 Vdc (selectable) Output Drive Capability: Current - 550Ω max Voltage - 5,000Ω min Output Scale: 0 to 1000 ug/m ³ (menu selectable)
BACnet MODEL	Consumption: 50 mA max @ 24 Vdc, 80 mA max @ 24 Vac Interface: RS-485, 2 wire RS-485 Baud Rate: 9600, 19200, 38400, 57600, 76800 or 115200 (menu selectable) Address Range: 0 - 127 (menu selectable)
TRI-COLOR LED	Good: Green (0 to 50 ug/m ³) Moderate: Yellow (51 to 150 ug/m ³) Poor: Red (151 to 1000 ug/m ³)
LCD SIZE	35mm W x 15mm H (1.4" x 0.6")
LCD BACKLIGHT	Enable or disable via menu
DISPLAY VALUE	Mass Concentration: 0 - 1000 ug/m ³ Air Quality Index: 0 - 500 AQI Good/Moderate/Poor (menu selectable)
POWER SUPPLY	24 Vac/dc ±20% (non-isolated half-wave rectified)
PROTECTION CIRCUITRY	Reverse voltage protected, over-voltage protected
OPERATING CONDITIONS	0 to 50 C (32 to 122 F), 20 to 80% RH non-condensing
STORAGE CONDITIONS	-30 to 60 C (-22 to 140 F)
ENCLOSURE	Material: Polycarbonate, Grey, UL95-V0, IP65, (NEMA 4X) Dimensions: 84mm W x 117mm H x 29mm D (3.3" x 4.6" x 1.15")
WIRING	Screw terminal block (14 to 22 AWG) Screw terminal block (14 to 22 AWG)
WEIGHT	150 gm (5.3 oz)
COUNTRY OF ORIGIN	Canada

SUB-0017 | Duct PM Sensor



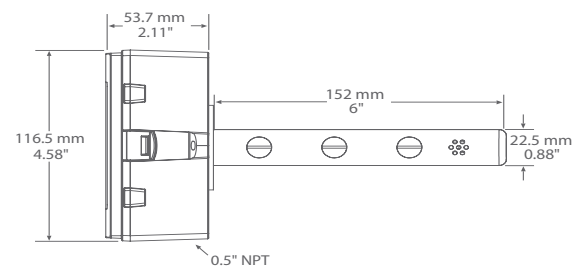
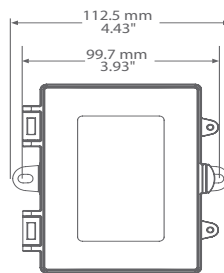
Product Data

SEN-0075 - Duct PM Sensor

Product Description

The SEN-0075 Duct Particulate Matter Sensor uses an optical sensor based on laser scattering principles and features innovative contamination resistance technology to perform highly accurate and reliable PM measurements. The replaceable sensor measures particles of PM1.0, PM2.5, PM4.0, or PM10, with a continuous operation lifetime of more than 8 years. The sensor will provide long-term reliability and high resolution particle size binning for the detection of environmental dust and other particles. A hinged and gasketed Polycarbonate enclosure is included for ease of installation.

Product Dimensions (mm)



MCERTS Certification



The SEN-0075 incorporates the SPS30 PM sensor for accurate and reliable PM sensing. The SPS30 particulate matter sensor has achieved MCERTS certification, which proves the performance of the PM sensor. In addition, the certification confirms that the SPS30 can be easily integrated into applications that comply with the European Air Quality Standard DIN EN 15267.

The MCERTS certification scheme was established by the UK's Environment Agency and is built around international and European standards to ensure high-quality environmental data monitoring. The SPS30 underwent laboratory and field tests and has been proven to fulfill the latest MCERTS and associated DIN EN 15267 European air quality standards. Compliance with the above-mentioned standards requires low intra-model variability ($\leq 5 \mu\text{g}/\text{m}^3$), making the SPS30 the first choice for integration into applications requiring high precision. The certification is issued by the Sira Certification Service, one of the leading notified bodies in Europe. They are also accredited according to ISO/IEC 17065 UKAS and are part of the Canadian Standards Association (CSA Group).

Learn more about the MCERTS certification on the website of CSA Group or have a look at the certificate as linked below..

Website: <https://www.csagroupuk.org/services/mcerts/mcerts-product-certification/mcerts-certified-products/mcerts-certified-products-indicative-ambient-particulate-monitors/>

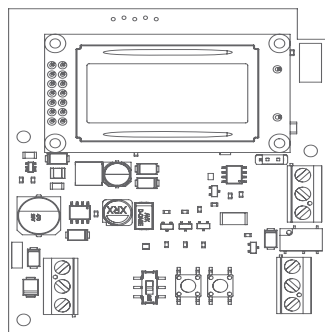
Certificate: https://www.sensirion.com/fileadmin/user_upload/customers/sensirion/Dokumente/9.6_Partikulate_Matter/Datasheets/Sensirion_PM_Sensors_Datasheet_SPS30_MCERTS-Certificate_2020.pdf

SUB-0017 | Duct PM Sensor (cont'd)

Technical Specifications

SENSOR	Laser scatter method (field replaceable)
PARTICULATE SIZE	PM1.0, PM2.5, PM4.0, or PM10 (selectable)
MASS CONCENTRATION RANGE	0 - 1000 ug/m ³
RESOLUTION	1 ug/m ³
ACCURACY	±10 ug/m ³ (0 - 100 ug/m ³), ±10% (100 - 1000 ug/m ³)
RESPONSE TIME	1 second
SENSOR LIFETIME	>8 years
ANALOG MODEL	Consumption: 75 mA max @ 24 Vdc, 100 mA max @ 24 Vac Output Signals: 4-20 mA (sourcing) or 0-5 Vdc / 0-10 Vdc (selectable) Output Drive Capability: Current - 550Ω max Voltage - 5,000Ω min Output Scale: 0 to 1000 ug/m ³ (menu selectable)
BACnet® MODEL	Consumption: 50 mA max @ 24 Vdc, 80 mA max @ 24 Vac Interface: MS/TP, 2 wire RS-485 Baud Rate: 9600, 19200, 38400, 57600, 76800 or 115200 (menu selectable) Address Range: 0 - 127 (menu selectable)
TRI-COLOR LED	Good: Green (0 to 50 ug/m ³) Moderate: Yellow (51 to 150 ug/m ³) Poor: Red (151 to 1000 ug/m ³)
LCD SIZE	35mm W x 15mm H (1.4" x 0.6")
LCD BACKLIGHT	Enable or disable via menu
DISPLAY VALUE	Mass Concentration: 0 - 1000 ug/m ³ Air Quality Index: 0 - 500 AQI Good/Moderate/Poor (menu selectable)
POWER SUPPLY	24 Vac/dc ±20% (non-isolated half-wave rectified)
PROTECTION CIRCUITRY	Reverse voltage protected, over-voltage protected
OPERATING CONDITIONS	-10 to 60°C (14 to 140°F), 20 to 80 %RH non-condensing
STORAGE CONDITIONS	-40 to 70°C (-40 to 158°F)
ENCLOSURE	Material: Polycarbonate, Grey, UL95-V0, IP65, (NEMA 4X) Dimensions: 116mm W x 100mm H x 54mm D (4.6" x 3.9" x 2.1") Probe: 22.5mm D x 152mm L (0.88" x 6")
WIRING	Screw terminal block (14 to 22 AWG)
COUNTRY OF ORIGIN	Canada

Wiring Information



TERMINAL	FUNCTION
PWR	+ 24 Vdc/24 Vac (HOT)
COM	Common
OUT	Analog Output

BACnet® Output

B(+)	Network Output
A(-)	Network Output
SHLD	Network Output

SUB-0012 | Space IAQ Sensor



Product Data

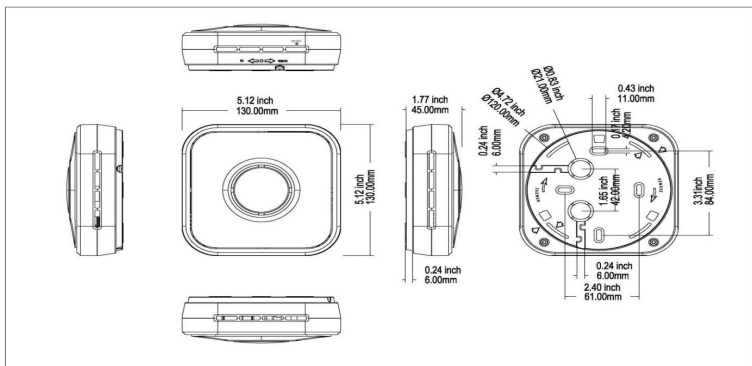
SEN-0077 - Space IAQ Sensor

Product Description

Real-time collecting of indoor air quality data in intelligent buildings / green buildings. Achieve multi-parameter and all-direction, real-time monitoring and assessment of indoor air quality and use it to control building ventilation and air conditioning systems.



Product Dimensions (inches [cm])



Product Application

- Online real-time detecting indoor air quality.
- Green Building Assessment
- BAS and HVAC
- Smart Home System
- Fresh Air Controlling System
- Building Energy Saving Reconstruction and Assessment System
- Classroom, office, exhibition hall, shopping mall, other public places

Features

- 24-hour online real-time detecting indoor air quality, upload measurement data.
- The special core multi-sensor module is inside, which is designed for the commercial grade monitors. The whole sealed cast aluminum structure ensures the stability of detection and improves the anti-jamming capability.
- Unlike other particle sensors, with a built-in large flow bearing blower and the control technology of automatic constant flow, SEN-0077 has much higher and long-term operation stability, longevity and higher accuracy.
- Providing multiple sensors such as PM2.5, PM10, CO2, TVOC, HCHO, Temperature and humidity.
- Using own patent technologies to minimize the influence from ambience temperature and humidity to the measured values.
- Two power supplies selectable: 24VDC/VAC or 100~240VAC
- Communication interface is optional: Modbus RS485, WIFI, RJ45 Ethernet.
- Supply an extra RS485 for WiFi / Ethernet type to configure or check the measurements.
- Three-color light ring indicating different level of indoor air quality. The light ring can be turned off.
- Ceiling mounting and wall mounting.
- Simple structure and installation make ceiling mounting easy and convenient.
- RESET certified as the grade B monitor for Green Building Assessment and Certification.
- Over 15-year experience in IAQ product design and production, abundantly applied in European and American market, mature technology, good manufacturing practice and high quality ensured.

SUB-0012 | Space IAQ Sensor (cont'd)

Technical Specifications

General Data

Detection Parameters(max.)	PM2.5/PM10, CO ₂ , TVOC, Temperature & RH, HCHO
Output (Optional)	. RS485 (Modbus RTU or BACnet MSTP) . RJ45/TCP (Ethernet) with an extra RS485 interface . WiFi @2.4 GHz 802.11b/g/n with an extra RS485 interface
Operating Environment	Temperature: 0~50 °C (32 ~122°F) Humidity: 0~90%RH
Storage Conditions	-10~50 °C (14 ~122°F)/ 0~90%RH (No condensation)
Power Supply	12~28VDC/18~27VAC or 100~240VAC
Overall Dimension	130mm(L)×130mm(W)×45mm (H) 7.70in(L)×6.10in(W)×2.40in(H)
Power consumption	Average 1.9w (24V) 4.5w(230V)
Material of Shell & IP Level	PC/ABS fire-proof material / IP20
Certification Standard	CE, FCC, ICES

Temperature and Humidity Data

Sensor	High precision digital integrated temperature and humidity sensor
Measuring Range	Temperature : -20~60 °C (-4~140°F) Humidity : 0~99%RH
Output Resolution	Temperature : 0.01 °C (32.01 °F) Humidity : 0.01%RH
Accuracy	Temperature : <±0.6°C @25°C (77 °F) Humidity : <±4.0%RH (20%~80%RH)

PM2.5/PM10 Data

Sensor	Laser particle sensor, light scattering method
Measuring Range	PM2.5: 0~500µg/m ³ PM10: 0~800µg/m ³
Output Resolution	0.1µg /m ³
Zero Point Stability	±3µg /m ³
Accuracy (PM2.5)	10% of reading (0~300µg/m ³ @25°C , 10%~60%RH)

CO₂ Data

Sensor	Non-Dispersive Infrared Detector (NDIR)
Measuring Range	0~5,000ppm
Output Resolution	1ppm
Accuracy	±50ppm +3% of the reading (25 °C, 10%~60%RH)

TVOC Data

Sensor	Metal oxide gas sensor
Measuring Range	0~3.5mg/m ³
Output Resolution	0.001mg/m ³
Accuracy	±0.05mg/m ³ +10% of reading (0~2mg/m ³ @25°C, 10%~60%RH)

HCHO Data

Sensor	Electrochemical Formaldehyde sensor
Measuring Range	0~0.6mg/m ³
Output Resolution	0.001mg/m ³
Accuracy	±0.005mg/m ³ +5% of reading (25°C, 10%~60%RH)

SUB-0013 | Duct IAQ Sensor



Product Data

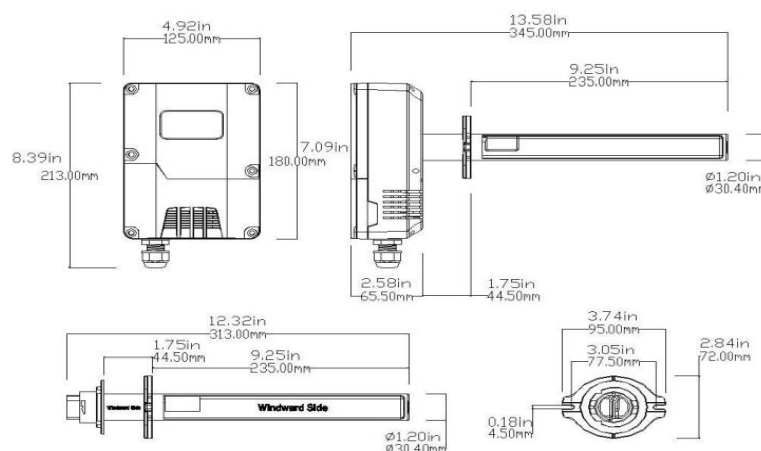
SEN-0076 | Duct IAQ Sensor

Product Description

Real-time collecting of indoor air quality data in intelligent buildings / green buildings. Achieve multi-parameter and all-direction, real-time monitoring and assessment of indoor air quality and use it to control building ventilation and air conditioning systems.



Product Dimensions (inches [cm])



Product Application

- Online real-time detecting indoor air quality.
- Green Building Assessment
- BAS and HVAC
- Smart Home System
- Fresh Air Controlling System
- Building Energy Saving Reconstruction and Assessment System
- Classroom, office, exhibition hall, shopping mall, other public place

Features

- SEN-0076 in-duct air quality detector is specially designed for monitoring multi-parameter air quality in air duct. Installed in wind duct or return air duct.
- Built-in a large air bearing fan, regulate the fan speed automatically, guarantee constant air volume and improve the stability and lifetime in long-term operation.
- Special design of pitot tube. Instead of the air pump mode, adapts to a wider range of wind speeds. Increases lifetime and there is no need to change the air pump frequently.
- Easy to clean filter mesh, can be disassembled and used many times.
- With temperature and humidity compensation, reduce the impact of environmental change.
- Real-time monitoring parameters: particles (PM2.5 and PM10), carbon dioxide (CO₂), TVOC, air temperature and humidity.
- Independently measure the temperature and humidity in the air duct, avoid interference from other sensors and monitoring heating.
- Provides BACNet communication interfaces selection. Provide multiple communication protocol choices.
- Connect to the data acquisition / analysis software platform to achieve data storage, data comparison and data analysis.
- Data can be read and displayed on-site with blue tooth or the operation tool.
- Working with SEN-0077 indoor air quality monitors together, comprehensively and accurately analyze the air quality. Quantitative assessment of indoor air pollution.

SUB-0013 | Duct IAQ Sensor (cont'd)

Technical Specifications

General Data

Power Supply	12~28VDC/18~27VAC
Communication Interface:	BACNet MS/TP
Data upload interval cycle	Average / 60 seconds
Applicable air speed of duct	2.0~15m/s
Operating Condition	(-4 °F~140 °F) -20 °C~60 °C/ 0~99%RH, (No condensation)
Storage Condition	(32 °F~122 °F) 0 °C~50 °C/ 10~60%RH
Overall Dimension	180X125X65.5mm (7.09X4.92X2.58in)
Pitot tube size	240mm (9.45in)
Net weight	850g (1.87lb)
Shell material	PC material

CO₂ Data

Sensor	Non-Dispersive Infrared Detector (NDIR)
Measuring Range	0~2,000ppm
Output Resolution	1ppm
Accuracy	±50ppm + 3% of reading or ±75ppm (whichever is bigger) (25 °C/77 °F, 10%~80%RH)

Particle Data

Sensor	Laser particle sensor
Measuring Range	PM2.5: 0~500 µg/m ³ ; PM10: 0~500 µg/m ³ ;
Output values	moving average/60 seconds, moving average/1 hour, moving average/24 hours
Output Resolution	0.1 µg/m ³
Zero Point Stability	<2.5 µg/m ³
PM2.5 Accuracy (mean per hour)	<±5 µg/m ³ +10% reading (0~300 µg/m ³ @10~30OC/50~86OF, 10~60%RH)

Temp & Humidity Data

Sensor	Band gap material temperature sensor、Capacitive humidity sensor
Temperature range	-20°C~60°C
Relative humidity range	0~99%RH
Output Resolution	Temperature: 0.01°C humidity:0.01%RH
Accuracy	±0.5°C, 3.5%RH (25°C, 10%~60%RH)

TVOC Data

Sensor	Metal oxide sensor
Measuring Range	0~3.5mg/m ³
Output Resolution	0.001mg/m ³
Accuracy	<±0.05mg/m ³ + 15% of reading (25 °C/77 °F, 10%~60%RH)